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Original Articles.

LARYNGECTOMY FOR CARCINOMA.*

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The text for this article was furnished by a patient who was brought to our clinic for diseases of the chest, throat and nose at Rush Medical College by Dr. Geo. A. Torrison, who had found him among his patients about six months previously. Dr. O. T. Freer had also seen the patient with him and a microscopic examination of a small mass removed for the purpose had confirmed their diagnosis of carcinoma of the larynx, which diagnosis was also concurred in by Prof. L. Hektoen.

THE PATIENT AND HIS HISTORY.

The patient, L. T., was a large, fine-appearing man, 47 years of age, who came to this country from Norway thirty years ago. He weighed about 200 pounds and had every appearance of robust health excepting the one symptom of hoarseness. He was a jeweler by trade, married and had three healthy children. He stated that he had malaria for three months seventeen years ago, had an attack of typhoid fever and also a slight attack of pneumonia some years ago, and in November of last year a rheumatic affection of the left thigh for a few days, which was followed by another slight pneumonia. Excepting these he had never been sick. He denied specific taint and there was nothing to cause us to question this statement. His mother died of old age at 83, father living at 83 in good health, two brothers and one sister living and well, aged respectively 56, 51 and 49.

The patient was a user of tobacco and alcoholic stimulants in moderate quantities, but had never been given to excess of any kind. There was nothing in his personal history to indicate the cause of the disease and there was no hereditary history of syphilis, malignant disease or tuberculosis. The hoarseness began eighteen months previously; it had gradually increased for twelve months, or until he came under the care of Dr. Torrison, six months before I saw him. At first, although the true nature of the growth was suspected, the diagnosis was in doubt, and the doctor wisely put him on iodid of potassium, under the influence of which the voice gradually improved for two months. When first seen by Dr. Torrison there were two smooth white nodules involving the middle third of the left vocal cord, attended also by some swelling or thickening of the ventricular band immediately above it. In November, 1901, the growth showed considerable increase in size and had already spread to the anterior end of the right cord, but there was no glandular enlargement.

THE PRELIMINARY TRACHEOTOMY.

On his first presentation at our clinic in the latter part of January, I found a growth of comparatively small size involving all of the left cord, giving it an irregular edge with a rough, slightly ulcerated surface, and increasing its size irregularly about four times. The false cord was also thickened and the right side was involved to about one-third this extent. There was no glandular involvement. I told the class that while I believed that, as a rule, patients with malignant growths in the larynx would live longer and suffer less from a simple tracheotomy than from laryngectomy, yet in this case the conditions were so favorable that I advised the latter operation. The patient was admitted to the Presbyterian Hospital February 4, and the next day at the college clinic I did a preliminary tracheotomy under cocain anesthesia. The patient made an uneventful recovery from this operation, and at my clinic on February 26 was again operated on by the late Prof. Christian Fenger, who did a laryngectomy, which proved to be the doctor's last operation, as he died of pneumonia about a week later.[1]

PROFESSOR FENGER'S CLINICAL REMARKS.

I am greatly indebted to Dr. Karl Doepfner, Professor Fenger's assistant and associate instructor in surgery, for the report of Professor Fenger's remarks on this occasion, and to Dr. Otto T. Freer, instructor in diseases of the chest, throat and nose, for the clinical report of the operation.

Because of the comparatively small growth, absence of enlarged glands and its intrinsic character, I hoped that J. Solis-Cohen's operation might be performed, but after opening the larynx Professor Fenger found that the growth had perforated its walls; therefore, complete laryngectomy was the only operation to be considered. Before coming to the operation Professor Fenger spoke as follows of the history of this procedure, its results and the various indications for removal of this organ, illustrating his remarks with numerous free-hand chalk illustrations on the blackboard, which, unfortunately, I am unable to reproduce. Professor Fenger said:

THE HISTORY OF THE OPERATION.

Regarding the history of this operation in 1829 Albers of Bonn did experimental laryngectomy on dogs for physiologic purposes, but surgery was not yet advanced enough to make practical use of his investigations. In 1854 Bernhard von Langenbeck of Berlin intended to do it, but the patient refused the operation. In 1856 Koeberle also pointed out its feasibility. In 1866 Watson of Edinburgh performed the first total

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. J. F. Barnhill, C. R. Holmes and G. H. Makuen.

1. EDITOR'S NOTE.—This paper is published on the anniversary of Dr. Fenger's death, which occurred March 7, 1902.

extirpation for syphilitic stenosis. In 1870 Czerny made successful experiments on dogs for the purpose of surgical intervention in man, whereon in 1873 Billroth for the first time totally removed a carcinomatous larynx. Up to the end of 1897 we find in the literature 267 cases of total laryngectomy. Since then many more cases have been published.

POINTS OF ORIGIN OF CARCINOMATA.

It is important to distinguish between intrinsic and extrinsic carcinomata of the larynx.

Intrinsic carcinomata may originate from the true cords, the false cords, the interarytenoid folds, the ventricles of Morgagni or the subglottic space.

Extrinsic carcinomata spring from the epiglottis, posterior wall of larynx—pharyngeal surface (out of 18 cases this point of origin has been found 13 times), the ary-epiglottic folds and the sinus pyriformes.

J. Sendziak, to whom we owe the most recent and best statistical work, gives the following data: Out of 273 cases where the point of origin could be located beyond any doubt, the carcinomata were intrinsic in 204 cases or in 74 per cent., and among these cases the true cords were 107 times the primary seat of the affection. This means that the carcinomatous new growth in the larynx attacks by preference the parts covered with squamous epithelium. Consequently, the squamous-celled carcinoma is the predominant variety in the larynx, while the cylindrical-celled and the glandular (adeno-) carcinomata are less common. It means also that wherever the intrinsic carcinoma starts it follows in its propagation the squamous-celled surface. In other words, it spreads from one side to the other, most frequently along one cord to the commissure and then to the other cord (circular carcinoma).

Early regional infection of the neighboring lymph glands is not always manifest. It is more common in the later stages of the disease, and yet more frequent in the extrinsic carcinoma. This peculiarity is said to be due to the scarcity of lymph vessels in the walls of the laryngeal cavity proper. Metastases in remote organs have been observed in but a few cases. We may, of course, occasionally see a secondary carcinoma in a larynx, which had its primary seat in some neighboring organ, base of tongue, pharynx, thyroid gland, trachea, esophagus.

ETIOLOGY.

The etiology is unknown. Carcinoma of the larynx is much more frequent beyond the age of 40 (84 per cent.). Out of all cases published 39 per cent. occurred between the fifth and sixth decade of life, which is the most dangerous period. It is six times more frequent in men than in women. The disease is fortunately rare. Gurly in his tumor statistics, pointed out that out of all carcinomatous growths only 0.5 per cent. are located in the larynx.

THE THREE STAGES OF THE DISEASE.

Three stages of the disease are described:

Intrinsic Carcinoma.—1. In the stage of irritation there exists chronic hoarseness, which, according to Gerhardt, when occurring without cough in old people always suggests carcinoma of the larynx. Paresis or paralysis of one cord may also be present.

2. The ulcerative stage will be accompanied by fetor, cough, expectoration of muco-purulent, bloody, necrotic masses, and beginning dyspnea. We may or may not have pain either spontaneously, or on coughing or swallowing along the auricular branch of the pneumogastric nerve, radiating to the ear and occiput.

Extrinsic Carcinoma.—1. Here the first noticeable symptom will be dysphagia. This soon increases, and at the same time dyspnea may be noticed.

2. In the ulcerative stage, the symptoms are the same as in the intrinsic carcinoma.

3. The third or cachectic stage is common to both varieties—due to the lack of food (dysphagia), lack of oxygen (dyspnea), and sleeplessness caused by difficult respiration and pain. Death ensues in about three years after the onset of the disease, sometimes rather suddenly from suffocation or aspiration-pneumonia, sometimes slowly from cachexia and marasmus, due to the cancer and to the difficulty in taking food.

DIAGNOSIS AND PROGNOSIS.

I need not speak to you of the diagnosis, which has already been considered by Professor Ingals, but you should remember that macroscopic inspection is of more value in diagnosis than all other methods of examination, but do not forget that the reflected image in the mirror seldom reveals the full extent of the disease.

Microscopic examination of an excised particle of the new growth certainly is one of our best methods to clear up the diagnosis, but it is not infallible. Where it fails, and there is still strong clinical suspicion of carcinoma, we are justified in proposing and performing a laryngotomy. The diagnosis, however, is perplexing only in the early stages of the disease. The prognosis is hopeless without surgical intervention.

OPERATIVE TREATMENT.

According to our present knowledge, carcinoma should be extirpated wherever an operation is practicable. Carcinoma of the larynx may be extirpated by different operative methods.

1. *Endolaryngeal Operations.*—While benign tumors can usually be removed by endolaryngeal methods, and while even small malignant growths have been successfully removed in this way and the patients permanently cured, yet we must not put too much faith in such methods in operating on malignant tumors. We must always bear in mind that carcinoma is an infiltrating growth, infecting neighboring tissues which to the naked eye seem yet to be normal, and that it often spreads in the submucosa, leaving the mucosa healthy for a time at least. No doubt a skilful specialist will have good results if he sees such cases sufficiently early, but unfortunately this very seldom happens. Out of 640 patients—I quote from Sendziak—only 36 were treated by endolaryngeal methods with 25 per cent. absolute cures (3 years of observation), 14 per cent. relative cures (1 year of observation), 39 per cent. recurrences; in 22 per cent. the time of observation was too short or the diagnosis not absolutely established. All these cases came early under the treatment of skilful laryngologists and yet there were 39 per cent. recurrences. The following operative procedures must usually be preceded by a preliminary tracheotomy.

2. *Laryngotomy.*—We understand by this operation an incision, median or transverse, into the larynx through the skin with removal of soft parts only, not including cartilage. There exist at least 6 modifications of this operation. What are the results? Statistical figures may be annoying in a clinical lecture but they are instructive. Sendziak gives complete statistics up to 1894; to von Bruns we owe the figures from 1890-1898.

	1851-1894 (92 cases.) Per cent.		1890-1898 (60 cases.) Per cent.	
Cured more than three years	8.7	21.7	18.0	36.0
Under observation from one to three years	13.0		18.0	
Recurrence	53.3		28.0	
Death from operation	9.8		15.0	

That means bolder operating during the last decade, more cases, less recurrences, but also more deaths. All our big operations on the larynx must begin with a laryngotomy except where there is no doubt as to the bilaterality of the carcinoma. The larynx once split open and its interior laid bare for inspection and palpation—then only are we able to decide whether laryngotomy will do or whether we have to resort to partial or total laryngectomy. In the cases which may be treated by laryngotomy alone, the cartilages must be sound and no perforation must have taken place.

3. *Partial Laryngectomy.*—This, generally speaking, is a laryngotomy with more or less resection of soft parts and cartilage. It may be of half the larynx or more. There are different methods of doing this operation. The results are as follows:

	1876-1894 (110 cases.) Per cent.		1890-1898 106 cases.) Per cent.	
Cured more than three years	10.9	22.7	12.0	27.0
Under observation from one to three years	11.8		15.0	
Recurrence	30.0		31.0	
Death from operation	26.3		17.0	

This means distinctly more cures and less death-cases within the last ten years, but the same number of relapses due to the conservatism of the surgeons, in cases that were already too far advanced for partial laryngectomy. Radicalism in doubtful cases is safest in all cancerous growths.

4. *Total Laryngectomy.*—This consists in removal of the whole organ, with or without the epiglottis, and perhaps some of the adjoining tracheal rings and part of pharynx and esophagus. We must resort to it in all the cases of circular carcinomata and in most of the cases where the growth has become bilateral. Here are the results:

	1873-1894 (188 cases.) Per cent.		1890-1898 (81 cases.) Per cent.	
Cured more than three years	5 8	12 7	8 6	26 0
Under observation from one to three years	6 9		17 4	
Recurrence	32 4		23.4	
Death from operation	44 7		18 5	

During the last decade there are distinctly more cures, less relapses and many less deaths. What has brought about this improvement? Most of the patients formerly died from aspiration-pneumonia or wound infection (primary and secondary) even long after the general establishment of antiseptic wound treatment. The aspiration-pneumonia was combated:

1. By operating with the hanging head (Rose's position).
2. By the various tampon-canulas of Trendelenburg, Hahn, Koehler, and Gerster.
3. By suturing the stump of the trachea to the skin (Glueck and Zeller) instead of leaving it open in the wound.
4. By operating in the combined Trendelenburg and Rose's position and by keeping the patient in Trendelenburg's position for several days (W. W. Keen).
5. By loosening the trachea from the surrounding connective tissue, pulling it upward and suturing it to the epiglottis (if not removed), hyoid bone, lateral sides of pharynx (Foederl). This is an ideal operation where it can be done.

Phlegmonous inflammation of the wound has been most successfully prevented by closing the large pharyngeal opening (Bardenheuer). No longer saliva with its microbes could run down and infect the wound, and the external wound itself could be closed and very well drained in its dependent parts. By this method the patient can sometimes swallow immediately after the operation, although it may be more prudent to introduce a soft tube into the esophagus or resort to rectal feeding.

DEGLUTITION AND SPEECH AFTER OPERATIONS.

The restoration of the power of deglutition is of even more importance to the patient than restoration of the voice. After closure of the pharyngeal wound, patients are soon able to swallow, and if the sutures hold, nothing can enter the trachea. Before this plan was adopted patients were able to swallow solid and semi-solid food, but liquids would escape through the pharyngeal fistula into the trachea and cause cough, tracheitis or broncho-pneumonia.

After endolaryngeal operations, the voice will be more or less perfectly restored; after laryngotomy and partial laryngectomy, the voice will also usually return to such a degree that the patient can make himself understood. In Professor von Brun's celebrated case, the carcinoma affected one vocal cord. Ten years ago he removed it by performing a total laryngotomy—splitting open the larynx from the superior thyroid down to the trachea. A cord-like cicatrix formed at the place of the removed cord and the voice was restored so that the patient—a professor of clinical surgery—has ever since been able to deliver his clinical lectures.

After total laryngectomy the laryngeal voice is of course lost, but patients are able to whisper. Several different artificial larynges have been devised to overcome this difficulty, but most of the patients prefer whispering to carrying around such a rather cumbersome instrument. The whispering voice can be much improved by use, especially in the cases where the pharynx has been successfully closed. After the operative method where the trachea is stitched to the hyoid bone, and therefore opens into the mouth cavity, the patient not only has soon learned to swallow every kind of food, but has also developed quite a good so-called pharyngeal voice. By this method the patient also retains mouth and nasal respiration—a not unimportant physiologic function—while with other operations tracheal respiration with its inconveniences and dangers is persistent.

THE PATIENT AND THE OPERATION PROPOSED.

Our present patient has an intrinsic carcinoma as suggested by chronic hoarseness for eighteen months without cough and no wasting of the body as would occur in phthisis. The laryngoscope and the histologic examination substantiate the diagnosis.

The carcinoma is bilateral, consequently partial extirpation is no longer admissible, unless it be by the Solis-Cohen operation. This method is better than a simple hemi-laryngectomy as it takes away a part of the laryngeal skeleton of both sides. Professor Ingals hopes that this more conservative measure is yet practicable. A laryngotomy will allow us to carefully survey the larynx and determine the full extent of the disease.

A preliminary tracheotomy through the third, fourth and fifth cartilages was done three weeks ago, and the temporary tracheo-bronchitis has subsided. In this case blood will be prevented from flowing into the trachea by the sponge canula of Hahn, which I prefer to Trendelenburg's canula. The rubber bag of the latter is liable to collapse, or to distend below the end of the tracheotomy tube so as to cause suffocation.

OPERATION.

After insertion of the Hahn canula, through which chloroform was administered, Professor Fenger began his operation by making an I-shaped incision, the upper transverse cut following the hyoid bone, the lower one a line below the cricoid cartilage. The vertical incision was made in the median line. The two flaps thus outlined containing the skin, superficial fascia and prelaryngeal muscles were held aside. A curved needle was next passed under the hyoid bone, which was then pulled forward by a strong silk ligature. This brought the laryngeal region into strong relief, the thyroid, cricoid cartilages and trachea lying bared to view. The larynx was next opened in the median line, the thyroid and cricoid cartilages being split vertically and the thyrohyoid membrane severed from the hyoid bone. At the anterior inferior angle of the right quadrilateral plate the thyroid cartilage was found very thin, and when touched with a probe broke down before it, yellow carcinomatous material in a state of fatty degeneration oozing out. This condition and the fact that the growth was found to have involved the anterior half of the other cord made Professor Fenger decide that total laryngectomy was necessary. He called attention to the fact that the laryngoscopic appearances gave no proper idea of the great extent of the disease. Though no enlarged lymphatic glands could be detected, he thought that the best course would be to follow the laryngectomy in about six weeks by an operative search for lymphatic metastases in the carotid and submaxillary regions.

The patient was now lowered into an extreme Trendelenburg position, the body being inclined at an angle of 45 degrees so that in addition to the tampon canula the position of the patient with the head downward made it impossible for blood to enter the trachea or for the saliva to flow into the wound. The patient's heart at this time began to beat very slowly and it finally stopped for a few seconds, but he was revived and the operation finished without further anesthesia. Contrary to the usual practice, Professor Fenger began the removal of the larynx by severing it from its attachments at its upper part, as this gave a better chance to treat the pharynx and esophagus conservatively because they could thus be brought into view and separated more carefully from the larynx. It also gave great freedom of motion to the larynx and made it possible to lift it from its bed and twist it so as to expose the lateral portions in order to reach the vessels at its side. These

were the superior laryngeal, superior thyroid and inferior laryngeal arteries. The vessels were divided between two artery forceps and each severed portion tied. Working downward in this manner on both sides the larynx was carefully dissected from the pharynx and esophagus and then drawn forward and removed from its attachment to the trachea.

After the larynx had been removed it was found that the growth had extended close to the base of the epiglottis, which had been left with the intention of using it for closing the wound in the pharynx. Because of the nearness of the carcinoma it was thought safest to sacrifice the epiglottis. The opening into the pharynx and esophagus was now closed by sutures from above downward, thus completely restoring the pharyngeal tube. The severed end of the trachea was brought out of the wound and stitched to the skin where the lower transverse incision met the median incision. The skin flaps were turned in and sutured, care having been taken that every nook and corner of the wound was properly drained. Hahn's canula was removed and the old canula replaced. No blood had entered the trachea around the sponge. Catgut was used for the ligatures and pharyngeal sutures. The knots were tied inside the pharynx. Moist boric acid dressing was used.

The recovery was uneventful, except that on the fourth day the esophageal tube was retched up by the patient and on the same day a communication formed between the pharynx and the wound from sloughing away of the anterior wall of the pharynx. This untoward event afterward prevented the patient from swallowing liquid food, which would escape through the pharyngeal fistula. Whether this fistula will close spontaneously in a few months or be closed by a plastic operation remains to be determined.

Dr. Fenger concluded that it would be better not to use a permanent esophageal tube for feeding, but to nourish the patient by rectum for a few days and afterward to teach him to swallow liquids, for this purpose using sterilized milk, or if this did not succeed an esophageal tube should be used for a time at each feeding.

34 Washington Street.

DISCUSSION.

DR. T. R. CHAMBERS, Jersey City, N. J.—I wish to speak of two points. The first is the assertion made that when you have cancer you must take it away. I think that is liable to be misunderstood. Personally, I think I would rather die, if I had cancer of the larynx, than to have to suffer with the growth only partially removed. Its return would mean a great deal more agony to me than the few months or possibly only a few hours of life after a major operation like laryngectomy. The Doctor then says that a major operation on the larynx must always be preceded by tracheotomy. I do not know whether he considers an excision of the epiglottis near its base as a major operation, but last Friday I removed the epiglottis at its base for cancer of the epiglottis and the patient did very nicely, although no tracheotomy was done. I think I would remove cancer in its very incipiency, if possible.

DR. O. T. FREER, Chicago—Dr. Fenger did not advocate tracheotomy as a preliminary to all total or partial laryngectomies, but advised it where there is uncertainty as to the extent of laryngeal carcinoma, that is, in those cases where partial laryngectomy or laryngotomy may perhaps suffice to eradicate the disease, and preliminary laryngotomy is therefore done to determine whether the larynx may be in part preserved or needs total removal.

Where total laryngectomy is contemplated from the start and dyspnea is not urgent, it is better to remove the unopened larynx without preliminary tracheotomy, as this creates a suppurating wound with surrounding inflammation, and a cleaner, neater dissection can be done without it. In addition, the presence of a tube in the trachea leads to coughing fits that add to hemorrhage and interrupt the operation. In total laryngectomies of this type it is better, therefore, not to open the trachea or larynx at all. In distinction to this, partial laryngectomy, even if merely contemplated as a possibility, necessitates laryngotomy and consequent bleeding into the lumen of larynx and trachea. This hemorrhage may be severe and hard to control, while that occurring in total laryngectomy is easily arrested and reached. It is therefore well to insert a sponge tampon canula into the trachea in cases of contemplated partial laryngectomy, though it is not a necessity, as Rose's position will usually answer to keep the trachea free from blood. The tampon canula insures against aspiration of blood upward into the trachea and its clotting there and makes the extreme Rose's position unnecessary, and this is an advantage, as the position with inverted head adds much to bleeding and is uncomfortable for the operator.

Cocain is always to be first applied to the trachea through the tracheotomy wound to avoid the coughing due to the presence of the tampon canula.

DR. NORVAL H. PIERCE, Chicago—I think it is important in all cases to do a preliminary tracheotomy before either a partial or complete removal of the larynx. Not only does this give us breathing space during the operation and prevent the entrance of blood into the larynx, but in the after-treatment the discharges are cut off from the trachea, and thus the most frequent cause of death, aspiration pneumonia, is largely avoided. I have seen Fenger perform the operation three times, and in all of those cases he made a preliminary tracheotomy.

I would like to put on record a case which illustrates very nicely the difficulty of diagnosis of carcinoma of the larynx in its early stages. A Canadian clergyman was stopping in the city, and a friend advised him to consult me regarding a hoarseness which had lasted some six months. He was obliged to give up his work because of this hoarseness; his physician advising rest as a cure. The laryngeal picture was as follows: On the right cord below its surface was a nodule, pinkish in color, but well defined, with no induration around its base and no redness of the cord, except possibly a slight pinkish color of the upper surface above the growth. It was the size of a small split French pea or even smaller. I removed this growth as well as I could through the natural way, and was surprised, on microscopic examination, to find evidences of sequestration of epithelial cells. This case, immediately after the operation, assumed a malignant character. The induration increased so that after five days the entire picture was changed, the hoarseness was greatly increased, and it came to the point where I advised him to have an external operation performed. Greatly shocked, and not at all friendly toward me, he returned to his home in Canada, where I have heard that he is steadily going down. Now here is a case in its incipiency where I was misled in my diagnosis, thinking it to be a simple papilloma, and I am sure no one could have made the differentiation by the microscopic appearance at that time.

DR. PETER J. GIBBONS, Syracuse, N. Y.—I notice in the abstract that the patient was able to speak. I did some work registering on the phonograph the voice of Dr. Solis Cohen's first case. I registered on the cylinder of the phonograph what he could say and how it sounded and repeated the examination every three or six months or a year. At the meeting in Philadelphia I reproduced them. I have used the phonograph to register other cases since then, and I have come to use it frequently. In a case in which a physician was sued for malpractice for the removal of a tonsil, I used the phonograph for the registering of the voice, which won the case for the doctor. By registering the voice of the patient on the phonograph, we encourage other patients, who can hear the records when an operation is contemplated. The patient will often consent to an operation when he would not, prob-

ably, if he did not hear the reproduction of the voice. It is a simple matter to register the voice in this way.

DR. E. FLETCHER INGALS, Chicago—In reference to whether carcinoma should be operated on or not, I simply gave the late Professor Fenger's views. I am, personally, heartily in sympathy with what the Doctor said; I should not usually have laryngectomy done for carcinoma. In all my experience I have only seen a single case in which laryngectomy seemed to me justifiable, and that was the one here reported. In the presence of cancer I believe the majority of cases will live longer and more comfortably without laryngectomy than with it. Professor Fenger believed that tracheotomy was not desirable in some cases. In this case I had done tracheotomy myself beforehand, without consulting Dr. Fenger about it. The case referred to by Dr. Freer was operated on by what is sometimes called Keen's operation, without a previous tracheotomy. It is turning out very satisfactory, and if other cases do as well, preliminary tracheotomy would not often be necessary.

THE ASCH OPERATION FOR DEVIATIONS OF THE CARTILAGINOUS NASAL SEPTUM: WITH SOME CONDITIONS COMPLICATING ITS PERFORMANCE.*

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There are many varieties of deviation of the cartilaginous nasal septum. In some the occlusion is complete, in others partial, some are high up while others are close to the floor. In some there are adhesions resulting chiefly from previous attempts at their cure, principally caused by the use of escharotics, while in others the deviation of one side is associated with a dislocated columnar cartilage on the other, making it S-shaped; and finally diseased conditions may lurk behind the obstruction. The bony septum is likewise deviated at times.

The record of a few of the complications of septal deviations is here presented.

CASE 1.— J. W., aged 17, was sent to the New York Eye and Ear Infirmary by one of our well-known laryngologists. His cartilaginous septum was deviated to the left. Occlusion was nearly complete, while on the right the columnar cartilage was dislocated, almost completely closing that side. His right nostril operated on by a dissecting operation with excision of the protruding end, the mucous membrane stitched together and in a fortnight the parts had healed firmly and a free current of air established on that side, thus relieving the dislocation of the columnar cartilage. Subsequently an Asch operation was performed and the result was a straight septum with perfect respiration.

CASE 2.—E. S., male, 26 years old, suffering from complete obstruction of left nostril and periodic attacks of hay fever. The main points of an unusual nature in this case were the complete occlusion and many points of adhesion of the cartilaginous septum to the inferior turbinate and the exceeding thinness of the septum. Escharotics had been formerly applied. In this case a perforation resulted, but the breathing is free and unobstructed and the improvement in health marked.

CASE 3.—Patient of Dr. C. S. Bull; male, aged 28; had applied to him for relief of a marked bulging of the left eye. The vision being normal, the bulging being prominent in the temporal and infraorbital regions, the diagnosis of an extrinsic tumor was made, which evidently caused the bulging. His nose was found to be obstructed, and at Dr. Bull's request I examined him. A complete deviation of the cartilaginous septum was found and it was utterly impossible to make any intranasal examination. I advised operation of his deviation to enable further examination, as a means for diagnosis. He was found to have a mitral regurgitant murmur and hence no anesthetic was given. Under cocain the Asch operation was performed and the result eminently satisfactory. A free field was opened for examination and no further intranasal obstruction found. With the restoration of breathing the bulging of the orbit diminished to a great degree, though it was still pronounced. The diagnosis of an osteoma of the orbital cavity was then made. The patient feeling so comfortable was averse to any operative procedure on the orbit and so was Dr. Bull.

A further series of cases might here be added for the relief of the bony deviations that occur so frequently. In all of these, however, the trephine, or the crushing instrument devised by Roe seems to be the most valuable of the means at hand, for details of which we refer to the writings of the originator.

In considering the accidents reported following the Asch operation we note that Robert Levy reports a case of death subsequent to the Asch operation, the cause of death being acute meningitis. The patient was an opium habitué, and his general condition so poor that any operative procedure would tend toward a fatal result, hence this operation could hardly be said to be the real cause of death in this case.

Stucky records injury to turbinates on the deflected side. The thought occurs, in trying to find a reason for the possibility of this, that the dull blade which is always introduced on the deflected side might have been made sharp by the instrument maker, otherwise its occurrence seems most difficult of explanation.

In a recent article on the "Correction of Deflections of the Nasal Septum with a Minimum of Traumatism," a new operation is presented, and the writer proceeds to demolish that of Asch. "Asch's procedure," says the author, "is intended to accomplish by force under narcosis in a few minutes, *without the aid of sight,* a result which can be attained only by the use of much more time and with the infliction of some pain by rhinoscopic methods."

As to the force required in the Asch operation, let us compare the writer's own method with that of Asch. The writer advocates the forcible removal of exostoses and crushing by means of the Roe forceps in an operation whose duration may be from thirty-five minutes to one hour and a half, under the local anesthesia produced by cocain in powder.

Asch cuts the cartilage in full ether narcosis, uses powerful compressors in the same unconscious state. Can any rhinologist picture the former method as being the gentler one? The most stoical of patients will surely moan as the former manipulations are being made, while the less determined will give vent to shrieks of pain of a heart-rending character as the crushing process is being performed; others again will go into collapse and give us a serious hour or two, if nothing more, from the action of cocain on the heart.

On the other hand, what surgeon hesitates to use force under ether to reduce a dislocation, to refracture a poorly-united bone, etc.? For this, anesthesia is humanity's boon and force can surely not be considered as an objection.

My own statement that "the Asch operation is one of magnitude" is quoted. The remark was made by myself in pleading for general narcosis and rest in bed and not as regards traumatism. The following instance, I am credibly informed, is by no means an unusual one:

Vigorous male, aged 32, septum deviated to right. Asch operation under cocain; tubes inserted and patient allowed to go home in an hour. Three hours later he was found exhausted and exsanguinated and hurried to a general hospital

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, C. R. Holmes and G. H. Makuen.

in an ambulance, where his tubes were removed, his nose packed and the bleeding checked.

When, at the end of a week, he left the hospital he had some pronounced views, let us hope, on the question of resting after such an operation.

I still hold the views formerly expressed; in one instance operation was delayed for over a year because I insisted on anesthesia and at least three days' rest. The patient finally consented, and has been grateful to me ever since for considering the operation of sufficient magnitude to require this.

The writer uses the words "without the aid of sight" as indicating the manner of operating, and here I must seriously challenge him to produce one single line from either the writings of Asch or of myself, or from the very clear description given by Shurly, Ingals, Conkley and others in their text-books as indicating that this operation should be done in such a manner. Indeed, the first great care is to have the broad light from a window, either direct or reflected, or else a properly shielded electric lamp; the Asch operation is done no more without the aid of sight than is an operation for adenoids or than with the Roe forceps, which I employ.

There are no two opinions regarding the question of the purpose of the Asch operation. It deals with the cartilaginous septum only. The bony septum can and always is cared for by means within our command.

As to the use of tubes after the operation: in the earlier operation packing was indulged in. This was very distressing to the patient and the tubes were the ultimate result of our efforts to support the broken septum in a proper position until the parts were firmly knit. In the hundreds of cases seen by me I know of few real complaints about the tubes—surely a few granulations can have no terrors to a skilled rhinologist—one sweep of a curette will end that. Compared to the comforts obtained, as against packing, of a properly fitting tube, there can be no doubt whatever.

That the Asch operation is of "growing popularity" is not due alone to the rapidity of its performance, but surely also to the results attained. To present the names of those who perform the operation to their own satisfaction and that of their patients would be to call a roll of many of those distinguished in their profession as rhinologists. To say that these advise and practice its performance because it is so simple a matter and not because it is in their opinion of the greatest good to their patients, is to make an unwarranted statement, to attack their intelligence and their surgical skill. Results and these only must count. Furthermore, no operative procedure, however simple, is free from unforseen and unhoped for complications, nor has there been any operation ever devised that will answer for every kind of deformity; nor can any operation hope to become popular which rests on the basis of attacking all others. In neither Asch's statements nor my own have other methods been attacked; it has sufficed us to say that the vast majority of deviations may be successfully cured by this method, and an experience of twenty years fully justifies that assertion.

The last word regarding any operative procedure is never spoken; the more popular it becomes the more frequently it is mentioned and assailed.

By our own mishaps and those of others we learn to avoid these and perfect our technic. Intelligent and fearless criticism is cordially welcomed, and it becomes incumbent on us to weigh these carefully and to answer them as best we may in the same cordial spirit.

25 East Seventy-seventh Street.

DISCUSSION.

DR. O. T. FREER, Chicago—I am the author referred to by Dr. Mayer. It is possible that, in my enthusiasm for the operative method advocated by me, I criticised the Asch operation with undue severity in contrasting it with my own mode of procedure. The operation that I prefer is that of the window resection, as it is named by Krieg, who was the first to give it a detailed description. Not knowing of the writings of Krieg and Bœnninghaus on the subject. I developed the operation independently in the course of my own work, as it seemed to me the most natural and proper one for a structure like the septum. The details of my method, therefore, differ somewhat from those of Krieg's proceeding, and much of my instrumentarium is original; both are described in my article in THE JOURNAL of the American Medical Association, March 8, 1902. Since this publication further experience has led me to make improvements which I hope to describe at some future time. The essentials of the method remain unchanged, however.

The resection operation consists in the removal of the cartilage and bone between the layers of mucous membrane lining both sides of the septum to the entire extent of the deflection. It is my experience that deflection of the bony septum usually continues that of the cartilaginous portion and that if the latter alone be straightened the patient will get but partial or no relief. The usefulness of the Asch operation is limited to the cartilaginous septum, therefore if the cartilage be straightened by it and the bone behind it be deflected or an exostosis be present this must be removed by a second later operation.

I agree with Dr. Mayer's objection to the Roe forceps. I included it in the instrumentarium described in my article, but further experience has led me to discard it. As Dr. Mayer has stated, the instrument often inflicts great pain, and for this reason and because it is impossible to tell with all fracturing procedures whether the break will occur in the desired place or not I have discontinued the use of the Roe forceps. In elastic septa it often failed to fracture at all, and sometimes would displace fragments in unexpected and undesired directions. Instead of fracturing, therefore, I now cut away all of the bony deflection as well as the cartilaginous. For this purpose I use cutting bone forceps, Gruenwald's strong nasal scissors, trephines and the chisel. A light, sharp chisel, with long bevel, impelled gently with light taps of a dental mallet will not fracture the septum beyond the field of operation. The instrument must simply be proportioned to the strength of the structure to be operated on. The use of a heavier chisel and mallet with strong malleting would be disproportioned to the resisting power of the septum and might break it. The light chisel cuts bone like a knife.

Dr. Mayer's description of the suffering I inflict on my patients has made me feel very sorry for them. The fact is that many of them chat with me while the work progresses and they often tell me that the resection of the cartilaginous part of the septum is quite painless. Trephining and cutting the bone causes more pain, but nothing that children of 12 and 14 have not borne without much complaint. Cocain anesthesia, therefore, makes the resection operation one of such slight suffering that I now boldly tell my patients that they will have but little to endure. All fracturing, however, or attempts to push over portions of the septum cause severe pain, as it strains distant portions not under the influence of the local anesthetic.

Faintness, as I have explained in my paper, seems associated with the first terror due to anticipation of the operation, and has invariably passed off in my experience after the work has gone on for a few minutes. It is not due to cocain, as in spite of the continued use of this drug, the faintness disappears.

The septum is a partition that consists of an elastic spring, the quadrangular cartilage, in front and a stiff bony plate behind. Less injury is done by complete exsection of the buckled part of this elastic spring than by attempts to force it into a straight line by its infraction. It takes greater force to break elastic than it does to break brittle substances, and

the result is apt to be imperfect. I therefore, from experience, ceased to attempt to deal with cartilaginous septal deflections by attempting to deprive them of their resiliency and relied on cutting them out as the most certain and mildest method. The cartilage or bone removed is of no physiologic importance, providing the mucous membrane be retained. It does not interfere with the support of the external nose. I have proven this often by extensive resections of the cartilage. Krieg has proved it, Bœnninghaus has also done so, as also have others. The accidents following the Asch operation are few and most of them may be due to chance, but I do not believe that it is as safe as the resection operation.

Dr. Mayer says that he uses sight in doing the Asch operation, and I apologize to him for stating that he does not. Nevertheless, I do not think that the Asch operation can be regarded as one where vision gives much aid, for, though the cutting may be done rhinoscopically, the fracturing certainly can not, and after the first cut the bleeding is too great to admit of useful vision.

The tubes employed in the Asch method are mildly irritating foreign bodies and, while usually harmless, are a source of discomfort and better dispensed with. After packing the naris for 2 to 5 days to avoid secondary hemorrhage, nothing is placed in the nasal fossa after the resection operation, as the naris operated on stands wide open, the deflection having been bodily removed.

The view of the interior structure of the septum offered me by complete excision of the deflection has shown me that deflections with walls of even, or nearly even, thickness are commoner than those with thickenings or exostoses. Many of the deflections, if merely sawed off by me, would have left in my mind the impression of exostoses.

One of the chief merits of the resection method is the fact that by it all of the deformity, bony and cartilaginous, may be removed at one sitting, radically and for all time, so that secondary operations are not needed.

There is no variety of deflection, whether thin or thick, complicated with exostoses, or ecchondroses or not, that can not be radically corrected by means of the resection method. It can not be done under a fixed rule, and the operator must be capable of modifications to suit the case and must have a sufficient assortment of instruments to cope with unusual obstacles, but if he gives heed to these conditions he will never fail to give the patient perfect breathing through the obstructed nostril when the operation is completed.

DR. C. R. HOLMES, Cincinnati—I would like to ask the Doctor if he uses the mallet and chisel.

DR. FREER—Yes.

DR. HOLMES—I do not understand the Doctor's method, and I would like to have him send me his reprints. I am afraid of chiseling on the bony septum. My lamented friend, Dr. Thorner, had one sad case in Cincinnati, where the use of the chisel was immediately followed by affection of the brain, and it was supposed that the death of the man was due to a fracture caused in this manner. Is it possible that drills can do the work?

DR. FREER—The trephine can do the work.

DR. HOLMES—Well, if the trephine could do the work, I think that would be much safer. If you study the skull, you will see how easily fracture may be caused, so that I would hesitate to use the chisel on the bony septum.

DR. C. F. THEISEN, Albany, N. Y.—In the cases in which the Doctor has to practice dissecting off the septum possibly back to the posterior nares, as he says is necessary sometimes, how is the nose supported?

DR. MAYER—The cartilages hold it in place.

DR. THEISEN—What if the individual receives a blow on the nose?

DR. MAYER—The cartilages will spring back the same as before.

DR. THEISEN—If the patient is under ether the operation is soon done and, in my experience, the patients do not complain of wearing the tubes after the first few days. They readily take out the tubes, cleanse them, and re-introduce them. In only one case have I had any trouble, and that was a case in which there was a small perforation before the operation. A small perforation resulted from the operation in one other case.

DR. P. J. H. FARRELL, Chicago—I have frequently performed the Asch operation and have been well satisfied with my results. I had the pleasure of hearing Dr. Freer read his paper on the operation devised by himself. I also have seen a number of cases after operation and the result in each case was very satisfactory. I will adopt the Freer operation in a series of cases on my return and will then have practical knowledge of both methods of operating for deviations of the cartilaginous nasal septum. I confess that I can see no good reason to quote men just simply to agree with them. I find it more instructive and interesting when an essayist has the courage to disagree with other writers. We all know that many of the papers read at medical meetings are simply a compilation. The bibliography frequently takes up more space than the subject itself.

DR. G. MCAULIFFE, New York City—Any discussion in reference to the bony portion of the septum should not be included in the discussion of the paper. Asch deplored the fact that his instrument was so badly manufactured and so poorly understood. The inability to get an exact right angle cross-section and the fact that the instruments are sometimes made with sharp points, will account for many unpleasant experiences. You can never make a straight line out of a curve, and I have found subsequently, after the Asch operation, there is a spur of bone in the lower portion, which necessitates subsequent sawing. As to the question of gentleness, if the operation is done thoroughly, the force necessary to run the finger up and break up the triangles (and it is necessary to break them up or they will spring out again), this procedure alone precludes the possibility of very great gentleness. But if the Asch operation is followed out according to its indications the result is good, except that you may have a spur to deal with subsequently.

DR. J. C. BECK, Chicago—I suppose the Doctor referred to me with the other men, for I told him that I did this operation. I attempted the operation on a man with a deflected septum very anteriorly. It was an ideal case clinically for the operation. In this particular case the operation was not difficult, and I used Adams' straightening forceps. The result was very good.

DR. J. E. BROWN, Columbus, Ohio—It seems to me this ought not to be a question of antagonism between, but simply a choice of, operations. We have here two operations, each with excellent features to recommend it to the surgeon. In a field of work much more limited than that of either of the essayists I have seen cases that I felt were not adapted to the Asch operation, and I have studied with much interest the method of Dr. Freer, and believe that in a certain line of cases it is to be preferred to the Asch operation. Under general anesthesia this latter is certainly not brutal, but the use of general anesthesia is certainly necessary for its satisfactory performance. I have twice made the operation under cocain, both times in the hospital, and it was in each case followed by more reaction than usual, and considerable prostration. In one case acute follicular tonsillitis appeared following the operation. I would hesitate very much before trying the operation again under cocain. Since the publication of Dr. Freer's paper I used his method in two cases. I was able to complete it with only a slight faintness on the part of the patient, and there seems to be no more pain than in any operation for the removal of a septal ridge. In one of these cases where there was a deflection of the bony septum, instead of chiseling above and below as described by the author, I used the Hajek chisel, removing the apex of the ridge.

In regard to perforations following operations for deflected septum, I should like to hear from some one who has seen bad results from these. In response to a question on this point to Prof. Moritz Schmidt of Frankfort, he said he had never seen bad results from such perforations, and that in some cases he would feel no regret from having them follow. It would seem that where the deviation is not perfectly corrected a perforation might be a conservative factor.

DR. EDWIN PYNCHON, Chicago—In his discussion, Dr. Freer said he ofter found simple deflections, but my experience has been the opposite. There is, in my experience, almost always more or less thickening. The occasional unfavorable results from the Asch operation may, I think, be due to such thickening. It is advisable to first reduce the thickened deflection to a simple deflection. After doing the Asch operation, which I have done on several occasions, I find it necessary to do one or more minor intranasal operations in order to destroy the little ridges produced as the result of the Asch operation. I have not done this operation under cocain, but I shall do so. An occasional perforation will follow the Asch operation, but it in no way differs from perforations found at other times and from other causes. A small perforation here is not a source of annoyance if the septum is perfectly plain about it. The reason a perforation produces irritation is because there is a thickening of the septum posterior or superior to it. I have sometimes removed the thickenings in such cases and found the perforation caused no further trouble.

DR. G. HUDSON MAKUEN, Philadelphia—After reading Dr. Freer's original paper I resected the greater portion of a cartilaginous septum that was dislocated and protruded from the vestibule of the nostril for about half an inch. Not having all the instruments Dr. Freer describes in his paper, and perhaps owing to less skilful manipulation, I made a perforation at the junction of the skin with the mucous membrane fully half an inch long. I was surprised when I found it there, but it closed up fully by first intention, and I doubt if anybody, by looking into that nose, would know that any operation had been done.

DR. KATE W. BALDWIN, Philadelphia—One word in regard to local anesthesia in the Asch operation. Cocain, menthol and carbolic acid, equal parts, as an anesthetic enable one to do the Asch operation entirely satisfactorily without general anesthesia. This combination is a very strong local anesthetic and must be used more sparingly than cocain alone.

DR. EMIL MAYER, New York City—Dr. Farrell's point is well taken, and I shall omit all personal reference to Dr. Asch in the paper before publication. I felt that I owed an apology to the section for again presenting my views on this subject.

Regarding Dr. Freer's methods, I would like to say that dissections have been done ever since any operations were attempted on the nose. I must take issue with the statement that deviations of the cartilaginous septum are practically always associated with bony deviations. In the specimen which I here present and which I have just taken from Dr. Cryer's exhibit before you, you will see deviations of the cartilage with perfectly straight bone.

Dr. McAuliffe has called attention to the need of some slight operation being required after the deviation has been relieved. This does occur and is simply due to the anatomic conditions present. It is a mistake to believe that the septum is all of one thickness. It is broadest at its junction with the maxilla and, hence, after operation, we have a thickened base to relieve. This is done as though we had an ordinary enchondrosis to deal with.

Dr. Freer, in his original paper, said that he used Roe's crushing forceps and, hence, I made the comparison between the exquisite pain of that method and that of the Asch forceps. I protested against the statement that we work in the dark. The final outcome of all discussions on this subject will be that such operation will be chosen as best suits the individual case and with such methods and results with which the operator is most familiar.

A Preservative Solution.—J. A. Shellenberger of Philadelphia says in the *Philadelphia Medical Journal* concerning the best solution for keeping pathologic specimens: Some years ago I preserved a goodly number of specimens very satisfactorily in the following solution:

℞.	Chlorid of sodium	ʒiv	120
	Pulv. alum	ʒv	150
	Hydrarg. bichlorid	gr. ii	12
	Aq. Pur.	Oii	960

M.—In very delicate preparations use double the amount of water.

RECURRING MULTIPLE ANGIOMATA OF THE SEPTUM.*

JOHN O. McREYNOLDS, M.S., M.D.
DALLAS, TEXAS.

It is not my purpose at this time to present an exhaustive study of the literature of this affection, but only to report an interesting case which is now under my care, together with the treatment I have employed and the comparative failures that have followed, in the hope that the wider experience of the members present may aid me in the more successful management of an exceedingly obstinate trouble.

The patient, Mr. L. L. K., a young Jewish merchant of Dallas, is 32 years of age; and aside from his nasal disease is in perfect health, and gives no history of any serious illness or constitutional infection that would have any bearing on the subject. He reports that his mother for many years was subject to repeated very severe attacks of nasal hemorrhage that resisted all efforts at relief by very competent physicians. She finally died of some unrelated intercurrent affection.

Our patient is about six feet tall, weighs about 160 pounds and is rather pale in appearance. The general conformation of the nose is that which we so frequently observe among the Hebrews, but the type is not exaggerated and the contour would be considered normal. His habits as regards tobacco and alcohol are exceptionally good, and he is not addicted to any form of dissipation to my knowledge.

The interior of the nose, on inspection, reveals a fairly normal state of the turbinated tissues, and the structures about the nasopharynx are in good condition. But on each side of the cartilaginous septum, when the nose has not been recently subjected to any form of treatment, are a few very dark blue elevations, each about the size of a pea. They are discrete, rounded in shape, and are most numerous in the anterior superior portion of the septum. They are composed almost entirely of blood vessels apparently of the venous type and they do not resemble in color, contour or behavior the granulation tissue which we see following operations on the septum. In fact, they are little blood tumors, and on the very slightest provocation and many times without any discoverable reason, they will break forth without warning, and for an hour or more will bleed furiously, until the loss of blood is at times very great.

So far, we have not been able to find any marked alteration in the character of the blood itself and there is nothing like a general hemorrhagic tendency. Wounds in other parts of the body proceed in the normal way, and in other parts of the nasal cavity there has never developed any disposition toward hemorrhage. After a period of bleeding these little tumors are somewhat collapsed, but they soon fill up again, and by the following day they are again ready to repeat the process. Generally the bleeding is unilateral, but sometimes it is bilateral, and it occurs most frequently when bending forward or under the conditions which would exaggerate any ordinary epistaxis.

With regard to the treatment we have employed, looking to any possible constitutional background, we have administered a long line of alteratives, tonics and astringents in succession, and at different times, but without any appreciable results. For the local condition we have used all the most important chemical astringents and caustics in modified form, and with some degree of success. But by far the most useful agent that we have so far employed was the electrocautery for the complete destruction of the tumors and their tributary blood vessels immediately around them. This will effectually prevent the hemorrhage for a few weeks, when the patient again presents himself with another series of tumors demanding obliteration. More recently I have been using electrolysis in the region of recurrence, hoping that in this way I may be

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, C. R. Holmes and G. H. Makuen.

able to hold permanently the ground which I can always temporarily secure by the employment of the electrocautery.

Now, gentlemen of the Section, if you have any ideas to advance that will contribute to the permanent relief of this affection I wish to assure you that your suggestions will be most gratefully received, and due credit will be entered to your account in the future management of the case.

MERCURY IN SYPHILIS:

ITS ADMINISTRATION HYPODERMICALLY IN CONTRAST WITH OTHER METHODS.*

EUGENE FULLER, M.D.
NEW YORK CITY.

The question of the part played by mercury in the management and cure of syphilis is outside the sphere of the present paper. In fact, that question has long ceased to be a burning one, the potency and efficacy of mercury in this connection being admitted by all sane, honest and educated opinion. The relative value in the treatment of this disease of mercury and the iodids and the scope of each, although subjects of importance, will also not be here discussed.

The object of this communication is a consideration of the therapeutic methods of administering mercury, the rules to be observed in the employment of these methods, the relative advantages of each and the great importance of their proper adaption to individual cases.

ACCESSORY TREATMENT.

As a prelude to this discussion, however, the importance on the part of the patient of the observance of certain general rules tending to make the system tolerant of mercury, no matter how administered, should be duly emphasized. The most important of all these is the existence of a normal and cleanly condition of the teeth and gums. Decayed teeth should be filled or extracted, tartar removed and any defects at the line of junction of the gums with the teeth remedied. Careful brushing of the teeth and the use, twice daily, of a peroxid of hydrogen mouth wash is in all cases most essential. Oftentimes it is impossible for a person who maintains the mouth in a foul condition to tolerate mercury in sufficient quantity to stay the progress of syphilis. The avoidance of alcohol, the ingestion of an abundance of nutritious food, the observance of hygienic conditions and the regulated practice of physical exercise are other general rules, the following of which should be insisted on.

THE METHODS OF GIVING MERCURY.

There are three general and usual methods for the therapeutic administration of mercury, namely, by the mouth, cutaneously and hypodermically.

Administration by the mouth is the common method, and if judiciously so given the drug satisfactorily accomplishes its purpose in the majority of instances. There are many forms in which mercury by the mouth is administered. The metal in its natural state as pill-mass or as gray powder can be prescribed or one of the various salts of mercury can be given. Metal mercury salivates rather more readily than do the salts. If a person is naturally prone to looseness of the bowels, pill-mass, for instance, would be of little use, as its administration, even in small doses, would be apt to so accelerate the bowels that little or none of it would be absorbed. In a subject of naturally bilious or constipated habit the drug so given may be of special value, since, besides producing its constitutional effect, it also corrects the function of the bowels. Among the salts of mercury the bichlorid, the biniodid and the protoiodid are perhaps the most frequently prescribed. The bichlorid has comparatively little effect, as a rule, on the bowels. To be tolerated by the stomach it should be taken when that organ is full, and it should also be swallowed in conjunction with a rather long drink of water. Bichlorid of mercury to the amount of 1/8 grain three time a day can, in many instances, be well tolerated. In most cases the initial dose of the drug should be 1/20 to 1/16 of a grain, from which starting point the size of the dose should be increased. Some stomachs will not tolerate this salt. Where this form of mercury is pushed beyond the toleration point and where the stomach does not rebel a mercurial tremor is apt to be observed. Many of the preceding remarks apply to the biniodid, although I am not inclined to give that salt in quite as large doses as the bichlorid. The protoiodid is a salt much used and variously commented on. In the experience of many it is found too irritating to the bowels to be tolerated in a sufficient amount to overcome or even stay the progress of syphilis, provided the disease shows any evidence of activity. In my experience most brands of protoiodid made in this country are too irritating to be of value, small doses producing colicky pains and loose bowels. French imported protoiodid is much milder, and of this many times a patient will be found capable of tolerating 1/2, 3/4, or even 5/6 of a grain three times a day before the bowel symptoms develop. Protoiodid is a safe form of the drug, as it shows little tendency to salivate, the explosive bowel symptoms being the usual evidence that the dose limit has been reached. With this salt, as with the bichlorid, the initial dose should be small, the maximum one being reached by a gradual progression. Little of a descriptive nature need be said regarding mercurial inunctions and fumigations. When more mercury than the system can tolerate is by these methods absorbed, mouth symptoms, chiefly in connection with the teeth and salivation, manifest themselves. Therapeutically the cutaneous methods are, as a rule, efficacious. The chief arguments against them perhaps lie in the time they consume and the discomfort and uncleanliness they occasion, together with the publicity which may be not only associated with their administration at special establishments, or by attendants, but also caused by the continual soiling of the body and underclothing.

THE HYPODERMIC TECHNIC.

As the administration of mercury hypodermically is of somewhat recent origin, and as its therapeutic use in this manner is still restricted to the practice of comparatively few surgeons, it may be well to devote some special remarks to the technic of this form of treatment. In the first place, mercury so used can be administered as an aqueous solution of a salt or as an insoluble salt suspended in an oily medium. The medication should not be injected subcutaneously, but intramuscularly and deeply in connection with thick fleshy structures. The gluteal region represents the part best suited for these injections, care being taken not to involve an area so low that the sitting posture subjects it to direct pressure. If a soluble salt of mercury is to be employed the corrosive chlorid is to be preferred dissolved in a normal aqueous salt solution, each 10 to 15 m. of the solution containing 1/4 grain of the mercurial salt. The presence

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of the corrosive sublimate insures the sterility of the solution. As much as ¼ grain of the corrosive sublimate can be injected daily or ½ grain every two to three days. In commencing treatment, however, it is not well to make the initial doses as large as these until the tolerance of the individual to the drug is established.

Calomel suspended in sterilized olive oil is the form in which the insoluble mercurial salt was injected in the early experimental days of the treatment. Although the systemic mercurial effects from such injections were marked, still they were very unsatisfactory, owing to the painful local after-effects produced, many patients being rendered so sore in the gluteal region as to be in a large degree crippled for a week or so, while in a few instances actual abscess formation resulted. These disagreeable effects resulted chiefly from two causes: the difficulty in keeping a vegetable oil in a sterile condition and, to a less degree, to the natural irritating quality of the calomel. The substitution of liquid petroleum products in the place of olive oil worked a great change for the better in this method of treatment. Liquid vaselin, albolene and benzoinol are some of the names given to these petroleum derivatives. At the present time calomel is by many still employed suspended in one of these latter preparations, and the results reported from it when so used are satisfactory. Another mercurial salt, insoluble in oil, which has to a considerable degree supplanted calomel in this connection, is the salicylate of mercury. The salicylate is a powder which closely resembles the mild chlorid in gross appearance. The therapeutic strength of the two when employed in this manner is also identical. The salicylate is supposed to be the less irritating. As the result of much personal experience I have adopted it as the form of mercury I generally employ when using the drug hypodermically.

The ordinary full dose of the insoluble salt so injected is 1½ grains. This amount can be given in 20 minims of the oil. Twenty-four grains of the salt in ℥i of the oil would make a mixture every 30 minims, of which, when well shaken, would contain 1½ grains of the salt. The syringe to be used should be one of ℥i capacity, with a needle about 1¼ inches in length and of the bore and thickness of a small-sized aspirating needle. The caliber of an ordinary hypodermic needle is too fine to transmit oil. Syringes which are made wholly of glass or all of glass, with the exception of asbestos packing to the piston, are to be preferred. The oily mixture should be warm, about the temperature of the body when injected. Antiseptic precautions should, of course, be observed and the syringe and the solution should be sterile. The patient should stand erect with the buttocks exposed. After the mixture has been thoroughly shaken the syringe should be quickly filled, the needle attached and the injection given. Everything in this connection should be done speedily except the actual injection, which last should be gradual, a minute or so being taken to slowly inject the dose. The patient should be instructed to relax his muscle while receiving the injection. If 30 minims are to be injected care should be taken to load the syringe to the extent of 40 to 45 minims, and while the injection is being given the outer end of the syringe should be tilted slightly upward. The reason for this lies in the fact that in a freshly shaken oily mixture there must, of course, be an admixture of some air bubbles. If the directions here laid down are followed all these air bubbles will collect during the process of injecting in the upper further portion of the piston and be contained in the last 10 or 15 minims which are not injected. If at any time during the process of injecting much resistance is met to a further depression of the piston, or if the caliber of the needle becomes plugged by a packing therein of the mercurial salt, the needle should be immediately withdrawn and the remainder of the injection given in another place.

PRECAUTIONS.

Little pain or discomfort should be occasioned by the administration of this treatment. Sometimes the needle strikes a somewhat sensitive spot. The only really disagreeable feature connected with the treatment lies in the occasional puncture of a blood vessel of some size. This may cause a little intramuscular hemorrhage, the result being the leaving of a sore spot, which may persist for several days pending the absorption of the clot, or the end of the needle being left piercing the caliber of a vessel while the injection is being given the oil is taken immediately to the lung, the result being an embolism, which is evidenced by spasmodic coughing and some temporary dyspnea. It is on this last account that stress is laid on the slowness in the administration of the injection, so that if any chest symptoms develop the needle can be withdrawn. If severe chest symptoms develop the patient should lie down till they disappear. In 15 minutes to half an hour such symptoms generally disappear. In very rare instances a patient may have a reminder in connection with his chest for several days after such a mishap.

An injection of this description and dose is sufficient to medicate the average individual for five days to a week. The first few injections, and especially the very first one, are apt to produce systemic effects much more vigorously than are subsequent ones. In other words, individuals, as a rule, become systemically accustomed to mercury so given, the result being that they tolerate these injections without experiencing any special immediate or following discomfort. It is not unusual after the first injection for a brisk diarrhea to develop in an hour or two and last the better part of a day. Indefinite muscular pains or nervous symptoms somewhat akin to hysteria may with others be the immediate and temporary after-effects, while with many soreness of the teeth are experienced. On this account I make it a practice to explain to a patient preparatory to the administration of the first injection that some prompt systemic symptoms may be felt.

Although 30 minims of the oil mixture represent the average dose, many individuals will be found to take 40 minims without developing any systemic intolerance, while with a few 20 minims will be found to represent the dose best adapted. This form of injection, it is seen, does not require so frequent repetition to produce a given effect as does the corrosive sublimate solution.

Judgment must be used in hypodermic medication not to produce salivation. The gums must be watched and the breath observed. If mercurial odor be evident in the breath or if the gums be characteristically tumefied and bleed on pressure a repetition of the treatment must not be given till these symptoms subside. Although care should always be exercised in the continuous administration of mercury by any method, lest undue effects from the drug arise, especial care should be observed in connection with the hypodermic administration. I do not wish, however, by this remark, to frighten anyone so that he will be afraid to use this treatment, for I am firmly of the opinion that at the present time far more harm results in connection with

syphilis from the administration of too little than of too much mercury.

CHOICE OF CASES.

If an individual presents himself during the primary stage of syphilis and keeps under observation so that mercurial treatment can be inaugurated as soon as a definite diagnosis can be made, then, in most instances, the administration of the drug by the mouth is the form of medication to be first tried. If the drug so administered is satisfactorily tolerated and succeeds in not only dissipating the symptoms which may be present, but also in preventing the development of new ones, then there is no good reason for displacing the method first adopted in favor of another. Not infrequently in such an instance, however, mercury by mouth, although well tolerated, may not, especially during the first few months of its administration, be potent enough to entirely hold the disease in abeyance. In such cases a hypodermic injection given from time to time will satisfactorily supplement the effect of the mercury taken by mouth. If a person presents himself for the first time late in the secondary stage of the disease, where, owing to anemia, facial or other prominent eruptive manifestations, alopecia, cephalalgia, rheumatoid pains, mucous patches or like developments, it may be of the greatest importance to quickly quell symptoms, not only for the good of the individual, but also to prevent the fact that syphilis has been contracted from becoming generally known; then hypodermic medication is to be recommended owing to the quickness of the ensuing results, a marked fading in connection with an eruptive lesion and decided cessation in connection with pain being noted even after the first injection. In a case such as this after the disease is well under control, then it may be that another form of medication can be substituted.

ILLUSTRATIVE CASES.

There are a certain class of cases wherein mercury by mouth has little or no effect on syphilis. In a majority of this class the drug is not absorbed from the alimentary canal. This non-absorption many times is accompanied by diarrhea, though occasionally the bowel action seems normal. In the minority of these peculiar cases mercury taken by mouth is absorbed perhaps to the extent of producing soreness of the teeth and gums or salivation and yet may exhibit little potency in staying the progress of syphilis. In all these cases mercury should be administered cutaneously or hypodermically in order to attain satisfactory results. As there are some claiming to be authorities on syphilis who still declare that mercury administered by mouth is capable of successfully combating the disease in all instances, it may be well to make special allusion to the two following cases taken from my practice:

One was that of a man who first came to me nine months after his chancre. He had been put on mercury by mouth as soon as his chancre had fully developed, and had continuously so taken the drug until he left his first adviser and came to me. His alimentary tract had apparently tolerated the drug and he had been able to take it in full doses. So hard and persistently had the administration of the mercury been pushed that the gums and teeth had many times been resultingly affected. Three months after the chancre characteristic headaches began to appear, and then gradually the spinal nerves became involved. For six weeks before consulting me vertigo, more and more marked, had been associated with the headaches, the severity of which had become intense. The spinal condition had become so marked that the patient walked with great difficulty—and then with a bent and rigid posture. Areas of great sensitiveness had also developed over the cranium. As soon as the patient came under my care all mercury by the mouth was discontinued and the drug crowded hypodermically. A prompt amelioration of symptoms resulted and in six weeks he was in a comfortable state. Business at that time calling him away, the previous symptoms promptly returned, in spite of mercury by mouth. These were again subdued by hypodermic injections as in the first instance. This case finally got well under a prolonged course of hypodermic medication.

Another case which I will cite was that of a man who first reported with an initial lesion. After watching him long enough to make a diagnosis of syphilis positive the attempt was made to administer mercury by the mouth. The form of drug first used was pill-mass, gr. ½, three times a day being ordered. In four or five days marked salivation began in spite of careful attention to the mouth. After a wait of 10 days another attempt was made, gr. 1/16 hydrarg. chlorid corros., twice a day, being prescribed. In a few days the mouth again became sore, and the drug had to be stopped. In the meantime marked secondary evidences of the disease were rapidly developing. A careful trial was next made of inunctions. These were well tolerated. The disease, however, was precocious in its development, and on that account I thought well of making a trial of hypodermic treatment. The first hypodermic was very light, through fear of resulting mouth symptoms. As these did not develop, the hypodermic dose was quickly augmented and a full, vigorous course of such treatment was given. No mouth symptoms due to mercury manifested themselves during this latter treatment, and the subsidence of the syphilitic evidences was satisfactory and progressive.

In concluding, I wish to champion the cause of mercury hypodermically in conjunction with large doses of an iodid by the mouth in the treatment of syphilitic ataxia in such of those cases as come under observation before the spinal lesion has so resolved itself into sclerous tissue as to be wholly beyond the influence of antisyphilitic medication.

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DISCUSSION.

DR. A. W. BAER, Chicago—The question of the comparative value of the organic and inorganic mercurial compounds in the treatment of syphilis seems to be still unsettled. I have had very little to do with the organic salts, as I have found the inorganic salts efficient and reliable. I have no experience to report on the hypodermic administration. I prefer giving mercurials by the mouth and inunction and have not seen any reason to abandon this method as I have found it entirely satisfactory.

DR. W. J. ROBINSON, New York—Has the author of the paper had any experience with mercuric succinimid. From some observations made I have been much impressed by its freedom from irritating quality. It can be combined for hypodermic use with cocain if desired. In Germany this salt is used in 5 per cent. solution, with which is combined 1 per cent. of cocain hydrochlorate.

DR. EUGENE FULLER, New York—I have had no experience with the succinimid. No doubt there are many cases where giving the mercury by the mouth will answer the purpose quite as well, but it takes too long for the mercury to produce its constitutional effects, when given by the mouth, to make it suitable for use in urgent cases. In such cases, the hypodermic method is preferable on account of its prompt action and accuracy of dosage, and the fact that it is administered by the physician. There are many cases which can not be kept under observation for the length of time required for successful treatment, when they are allowed to take the medicine themselves.

Health in Islands.—It has been frequently observed that the inhabitants of islands and small peninsulas attain longer life than those of continents. The Barbadoes, Greece, Madeira and the Shetlands are quoted as illustrations of the truth of this statement.—*Medical News.*

DOSAGE OF LIQUID MEDICINES: A SIMPLE PLAN FOR GREATER ACCURACY AND METRIC MEASURES.*

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CHICAGO.

The strongest reason for the adoption of the metric weights and measures is the use of the present collection of arbitrary standards, conceived by chance and inherited by ages of medieval crudescence.

The paramount quality of that by which quantities are determined must be accuracy; that by which comparison is made must be as nearly invariable and inflexible as can possibly be devised, otherwise it is not a true standard. Scientific accuracy requires also that a fixed relation, only varied through variation in temperature, should prevail between weight and volume, and consequently that units of weights and liquid measures must be correlated, that is commensurate. No scheme for comparison which does not meet these fundamental requirements is worthy the name of a system, nor should be tolerated in this twentieth century.

CUSTOMARY MEASURES.

Subjecting the customary weights and liquid measures to this test they are found to be so absolutely at variance as to be a travesty on our boasted civilization and progress. Take the ounces of the three alleged systems for comparison, and they show the following equivalents in grains: avoirdupois, 437½ grs.; apothecaries', or troy, 480 grs.; fluidounce, 456 grs. (water at 15 C.). This is due to the fact that one pint of water weighs 7,300 grs. (approx.) instead of one avoirdupois pound, or 7,000 grs. In other words, the old saying "A pint's a pound, the world around," is as far from the truth as probably was the conception of the world by those who coined the catchy phrase.

There is a difference of about 4 per cent. which appears also in the apothecaries' ounce as against the fluid ounce, and is thus introduced in the smaller denominations, drams, grains, and minims; the fluid dram being equivalent to 56 grains, the minim about 96/100 of a grain.

INACCURATE DOSAGE.

It is this very discrepancy or lack of commensurability which is so trying both to the physician and pharmacist. In the formulation of percentage solutions, where great accuracy is usually required, there will be a discrepancy of from 4 to 10 per cent., according to which particular method the quantities have been determined. If, for example, the formula appears:

℞. Atropinæ sulphatis ..... gr. x
Aquæ sterilatæ ad ..... ℥i
M. Et. f. sol. Sig.: Use one minim.

If prepared by fluid measure each minim will represent 1/48 grain of atropin sulphate; if, on the other hand, a troy ounce of water should be used, owing to the absence of the prefix "fl" before the ounce symbol, then the amount of atropin in one minim would be about 1/50 grain, or, if perchance avoirdupois ounce be used, 1/44 grain would be contained in one minim. The difference in dosage may not be serious, but should such variations be tolerated, or such inaccurate methods be continued?

Aside from the disadvantages of inaccuracy and lack of uniformity of the customary weights and measures, there is also the lack of correlation with our decimal system of notation. For domestic purposes the convenience of a decimal system of weights and measures, in harmony with our decimal system of coinage, must be equally as great as this so-called international system now appears to be advantageous for the extension of foreign trade. As is well known, the decimal system of weights and measures is now in use in all but English-speaking countries. As it is complementary to our decimal system of money, it should have been adopted along with it, as advocated by Jefferson and John Quincy Adams. The return to the old system of pounds, shillings, and pence would be no more absurd than to continue to inflict on the coming generation the present aggregation of weights and measures.

THE FALLACY OF THE SPOONFUL.

Contemporaneous with the customary weights and measures are the so-called domestic measures for liquids, as represented by the "spoonful." How this useful utensil varies in capacity is well known, and when it is also remembered that the amount of liquid a spoon will hold when "full" depends on the generosity of the person filling it, the spoonful method of administration, while innocuous for placebos, can not be regarded as scientific medication. The "meniscus," or the level of a liquid, which determines a measured quantity, is, according to the best authority (Dr. Hager), the medial of a transverse line drawn through the lowest point in the surface of the liquid and one drawn at the highest point of contact with the liquid and the confining sides. This line may be easily determined when the liquid is measured in glass, and the smaller the diameter the more exact the measurement. As is well-known, the graduated pipettes and burettes used in chemical work are constructed on this principle. In measuring by a spoon the *meniscus* can not be readily determined, and owing to the cohesion of liquids, especially when aqueous, after the spoon has been filled to its apparent level, an equal amount of the liquid can be poured on top of it, if done slowly, without any of the liquid running over. For these reasons it may be safely asserted that instead of a teaspoonful being equivalent to one fluidram, it may be two fluidrams. In larger spoons the difference is proportionately less, but yet so great as to have no semblance of accurate measurements. Not only should standard spoons be devised, but a uniform meniscus should, if possible, be adopted, although the spoon measure, as best being empiric, should be superseded by graduated glass measures, similar to those at present extensively used. A readjustment of the relative volumes of the three different spoon measures in vogue is necessary, and such relation should correspond with metric measures.

Recently the following metric equivalents have been approved by the Philadelphia College of Pharmacy, and incorporated in the scheme presented further on in this paper: One teaspoonful = 5 c.c.; one dessertspoonful = 10 c.c.; one tablespoonful = 15 c.c.

The following definition for the meniscus, originally taken from the French Codex, has also been approved: "A spoon is full when the liquid it contains comes up to, but does not show a curve above the upper edge or rim of the bowl."

THE DROP.

But if the spoonful measure is only an approximation, the drop shows still less uniformity in volume. As

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Materia Medica, Pharmacy and Therapeutics, and approved for publication by the Executive Committee: Drs. A. W. Baer, A. B. Lyons and W. J. Robinson.

is well known, the size of drops varies with different liquids, is influenced by the size of the container and shape of the lip from which it is dropped, and by the temperature and volatility of the liquid. No careful physician would administer a potent agent by drops except through a minim pipette. Recent investigations have shown that drops of uniform size may be obtained by dropping from a pipette of a certain outside diameter; thus a tube of 3 mm. outer diameter will deliver 20 drops of water at 15 C., which will measure 1 c.c. when dropped at the rate of one drop per second. Nor is the size greatly influenced by the character of the liquid, be it watery or more mobile. Such standard "droppers" have been recommended for the exact measurement of medicinal liquids and, owing to its many advantages, this drop has been incorporated in the table.

ADVANTAGES OF DECIMAL DIVISION.

The decimal system has advantages in computing dosage and formulating combinations not possessed by the binary or octonary system on which our customary weights are based, because in accord with our system of numeration.

But it is in preparations for external use that the decimal system is *sui generis,* because their strengths are usually referred to by the per cent. or by per mille. Thus solutions for injections, etc., may be quickly prepared by taking for 100 c.c. the number of grams represented by the percentage strength; for 10 c.c. decigram may be used. Ointments, plasters, etc., may be equally readily computed.

EXACT EQUIVALENTS THE OBSTACLE.

The greatest obstacle to the more general acceptance of the metric system, especially for the older practitioners, has been the attempt to learn and to use exact equivalents for the customary weights and measures. Since the latter are not in accord with each other, the discrepancies appear in the respective metric equivalents, and the result is chaos and confusion. To illustrate: While 32 grams is a fair approximation to the apoth. ounce, it will not do to take it as equivalent to the fluid ounce, because in that event 16 fluid ounces would be equal to 512 gram, or one pint, considerable more than one-half liter, which at once makes the error apparent. This same discrepancy occurs in the other

ADAPTATION OF APOTHECARIES' WEIGHTS AND MEASURES TO THE METRIC SYSTEM.*

Showing by cross-references the relative quantities of customary denominations in Metric Terms, based on the Metric Standard Liter and Gram.

Decimal proportion to 1 (Gm.)	Denomination.	Minim, drop, grain.	Cubic cm., gram.	Fl. Dram, spoonful, dram.	Centiliter, tablespoonful, dekagram.	Fl. oz., ounce.	Deciliter, four-oz., hektagram.	Semiliter pint, semi-kilogram. pound.	Liter, quart, kilogram.	Abbreviations in order of preference.
0.001	Milligram	50	1,000	5,000	10,000	25,000	100,000	500,000	1,000,000	mg.; 0.001. } These three denominations given only
0.01	Centigram	5	100	500	1,000	2,500	10,000	50,000	100,000	cg.; ctg.; 0.01 . } for reference.
0.1	Decigram	0.5	10	50	100	259	1,000	5.000	10,000	dcg.; dg.; 0.1 . }
0.05	Minim, drop Grain	**1**	20	100	200	500	2,000	10,000	20,000	m.; mtm.; min.; gtt.; 0.05 c.c. gr.; mtgr.; 5 cg.; 0.05.
1	Cubic cm. Gram	20	**1**	5	10	25	100	500	1,000	c.c.; cm^3.; ccm.; ml.; 1 c.c. Gm.; G.; 1.0.
5	Fl. dram Dram	100	5	**1**	2	5	20	100	200	fldr.; flmd.; flmtd.; met. spoonful; met. cochl.; 5 c.c. mdr.; mtd.; metdr.; 5.0.
10	Centiliter. Dekagram	200	10	2	**1**	2.5	10	50	100	cl.; ctlit.; met. tablespoonful; met. cochlmag.; 10 c.c. Dkg.; Dekag.; 10.0.
25	Fl. ounce Ounce	500	25	5	2.5	**1**	4	20	40	mfloz.; met. floz.; quadcl.; 25 c.c. moz.; mtoz.; quad. Hkg.; 25.0.
100	Deciliter Hektogram.	2,000	100	20	10	4	**1**	5	10	dcl.; decilit.; flHk.; flquatuncia.; 100 c.c. Hk.; Hkg.; quatuncia; Four-ounce; 100.0.
500	Semi-liter Semi-kilogram	10,000	500	100	50	20	5	**1**	2	Smlit.; mpt.; ½ L.; 500 c.c. Smkg.; mpd.; ½ K.; 500.0.
1000	Liter Kilogram	20,000	1,000	200	100	40	10	2	**1**	L.; mqt.; 1000 c.c. K.; Kg.; 1.000.

This adaptation is based upon the fact that 20 drops of water at 15° C., delivered from a minim pipette with an external diameter of 3 mm., will measure one cc.

*** From a scheme of adaptation presented to the Committee of Revision of the U. S. Pharmacopeia (1900) by the author.**

A little practice will soon prove that by formulating the quantity in decimal amounts, the individual dosage may be seen at once without, as a rule, entailing any calculations. If, for example, ten or its multiple of powders, pills, etc., are ordered, the amount of the active agent for the whole quantity is at once apparent; thus:

	Dose.	10 powders.	20 powders.
R. Resinæ podophyllini	0|01	0|1	0|2
Hydrargyri chloridi mite	0|1	1|0	2|0
Sacchari lacti	0|5	5|0	10|0

		10 pills.	30 pills.
R. Acidi arsenosi	0|005	0|05	0|15
Strychninæ	0|001	0|01	0|03
Quininæ sulphatis	0|1	1|0	3|0

If a liquid mixture is desired, it should be similarly ordered in quantities of 100 c.c., 50 c.c. or 25 c.c.

	Dose in 5 c.c.	Dose in 100 c.c.	Dose in 50 c.c.
R. Morphinæ sulphatis	0|01	0|2	0|1
Potassii bromidi	0|5	10|0	5|0
Chloralis	0|3	6|0	3|0
Syrupi aurantii ad	5|0	100|0	50|0

denominations: dram, grain, and minim, and is too serious an objection to be disregarded.

There is only one way of using the metric system, and that is to use it, or a decimal adaptation of it, combining the desirable units, grain and minim, which are so inseparably bound up with dosage in the medical mind.

With 20 drops, equivalent to a cubic centimeter, instead of 16 drops, and assuming the gram to contain 20 grains instead of 15.432 grains, we obtain at once these two essential denominational units as concordant and with the necessary decimal relation to the metric units, cubic centimeter and gram, on which a simple adaptation of the customary weights and measures may easily be constructed, as shown by the accompanying table.

As will be observed, there are no changes whatever in the metric standards.

The new metric grain proposed is about one-fifth less than the troy grain.

The minim is a little less than one-fifth smaller.

The new dram is about two-ninths greater than the apothecaries'.

The new fluidram is about three-elevenths larger than the present fluidram.

Both drams contain 100 grains or minims.

The new ounces would be all alike, representing 25 gm. or c.c. and would be from one-eighth to one-fifth less than the customary ounces.

The metric ounce, 25.0; one-fifth less than 1 apoth. ounce, 31.0; one-sixth less than 1 av. ounce, 28.35.

The metric fl. ounce, 25 c.c.; two-thirteenths less than 1 fl. ounce, 29.5.

The metric pint and pound are 5 to 10 per cent. greater respectively than the pint and avoirdupois pound.

The discrepancy in these two is not great, and would be readily adjusted. Each would contain 20 ounces, or 100 drams, or 10,000 grains, or minims.

The advantages of this adaptation for the calculation of doses, the strength of preparations, etc., is self-evident. The dose of an active agent in any quantity of a solution or mixture would have a definite decimal proportion and could be quickly calculated in metric grains, or minims. The smaller quantities represented by the proposed grain and minim would not be as objectionable as is the lack of proper relation between the present denominations—a fruitful source of error in practice. Besides, the difference is on the safe side, and by employing the proper designations no mistakes could occur. The author recommends that the abbreviation of "Gm." for gram should always be written with a capital G, to avoid confusion with "gr." for grain, which is never written with a capital letter. The metric fluidram is especially designated "metric spoonful" to afford an accurate method for administration of liquid medicines.

The adoption of a definite spoonful measure would cause the domestic measurement of medicines by graduated measures exclusively. Of the centiliter, or tablespoonful, the same may be said. The decimal proportion of the ounces to the drams and also to the grain and minim would enable the prescriber to at once estimate the quantities and yet have the metric equivalents at a glance. The deciliter, or four-ounce, would be an exceedingly convenient quantity for extemporaneous prescription; containing 20 fl. drams it is well adapted to formulas of which the dose is a teaspoonful. For example: one grain at a dose; then 20 grains=1 Gm. to 100 c.c., or 4 fl. ozs.

In the belief that the adoption of some such adaptation, possibly as an appendix in the U. S. Pharmacopeia, would materially aid in the more general acceptance of the metric system for prescription writing, this scheme has been proposed to the Committee of Revision and is now presented to the profession.

NOTE.—*This paper was referred to a committee consisting of Drs. Frank Woodbury, H. C. Wood, Jr., and A. A. Eshner of Philadelphia to report on at the next annual session.*

A remarkable specimen was shown at the meeting of the "Section on Clinical Medicine and Surgery" of the Medical and Chirurgical Faculty, December 19, by Dr. José Hirsh. It was an immense aneurism of the arch of the aorta of 24 years' standing. The sac was entirely filled with a hard clot and had projected forward, evading the sternum at the junction of manubrium and gladiolus, so that these bones were at right angles to each other. Notwithstanding his condition, the man (a Frenchman) had led a laborious life as a bricklayer. The case was considered one of spontaneous cure. Owing to the position of the tumor, there was a remarkable lack of symptoms. Oozing of blood from the apex of the tumor took place from time to time, and infection occurred in this way, death being due to general streptococcus infection.

THE IDENTITY OF NERVE FORCE AND ELECTRICITY.*

J. EMMET O'BRIEN, M.D.
SCRANTON, PA.

There has been in recent years such advance by physiologists in knowledge of nerve mechanisms, though not of nerve force, and such advance by electricians in knowledge of electricity in its protean phases, that, I think, the view of the relation of nerve force to electricity ought to be taken up anew by physiologists and restudied in the light of modern electricity. Advances by physiologists appear in minutely studied anatomy of neurons, relaying nerve mechanisms, conduction paths, terminal mechanisms, etc., and advances in this direction by electricians have been in better knowledge of the electric phenomena of cables, learned since physiologic views of the electrical phenomena of nerves became rather arbitrarily fixed; of fine currents and the wide field of induction, as revealed by the telephone; new light on the merely relative value of insulation; the phenomena of high frequency currents and their apparent reversal of electric law in insulation; storage or secondary batteries; electric relays, repeaters, transformers, microphones, terminal mechanisms, etc., and lastly electrolysis and electrochemistry.

PRIORITY AS TO THIS THEORY.

Noting the analogies between nervous and electric mechanisms revealed by the advances of recent years in the separate fields of physiologic anatomy and electricity, I affirmed the identity of nerve force and electricity in a paper[1] entitled "Analogies Between Nervous and Electrical Mechanisms: What is Nerve Force?" to our county and state medical societies in 1900. On account of the importance of the subject, and because the same conclusion has since been reached through other paths by Professors Loeb and Mathews, I again present it, with some further studies. The lay press has, as you are no doubt aware, given entire credit for originality, not only in methods, but as to scope and conclusions, to Professors Loeb and Mathews. They are entitled to great credit for methods in arriving at the identity of nerve force and electricity.[2] But it is not the lay press but scientific societies and journals that ought to adjudicate the question of originality in method, scope and conclusions: and so to you I leave it.

THE SPEED OF NERVE IMPULSE TRANSMISSION.

In reviewing works on physiology I have not found reasons given for the usual statement that nerve force is not electricity. I presume that the supposed slow speed of nerve force, the apparent want of insulation, of continuous circuits and of galvanic elements in nerves have been the principal objections. If there are other, better reasons I am anxious to know and acknowledge their validity. It does not appear that any very decisive experiments indicating slow speed of nerve impulse have been made since those of Du Bois Reymond and Helmholtz, though theirs have been repeated by many. Although we have since learned much about electricity, these experiments appear to bind opinion still. These experiments were made and interpreted before much was known of the electric phenomena of cables; before

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. A. Stengel, Winfield S. Hall and Frank B. Wynn.

1. Published with drawings in the Pennsylvania Medical Journal, November, 1900.

2. See, for instance, "The Nature of the Nerve Impulse," by Mathews, Century Magazine, March, 1902.

the Gramme ring made electric power possible; before quadruplex telegraphy; before Reis invented the telephone or Bell perfected it; before Gray showed the harmonic duplex; or Edison perfected electric light, invented the phonograph or developed the miracle of the microphone discovered by Hughes in the variable resistance of carbon; before wireless telegraphy and the Roentgen ray; and before Tesla had revealed the apparent reversal of electric law of insulation by high-frequency currents. They were made before neuron anatomy was known. Charpentier, repeating the Reymond-Helmholtz experiments and ingeniously varying them, succeeded, according to the *Revue Scientifique*, in demonstrating about a year ago—that is, about a year after my first paper—that nerve force is electrical. While his conclusions favor the contention of my papers, I think that, with all other laboratory experiments so far made, they are not above criticism.

All these experimental data for and against the electric concept, are so far, I think, inadequate. You test a nerve cable at different points with depolarizable electrodes and, from the indications of a capillary electrometer, say that nerve impulse has a speed of only 30 meters per second. Does this test the normal physiologic currents of a nerve or warrant the conclusion as to speed? I think not. You apply the electrodes to the cut surface of a nerve cable, or of muscle, and get electric manifestations. You irritate a nerve and note the time of muscular contraction. Do any of these experiments directly measure normal currents or indicate their speed? I can not think so. The most that can justly be said for them is that they prove the presence of electricity in nerve and muscle. Suppose we applied precisely similar tests to a telephone cable or an ocean cable, we would get various electric indications and might call them cable impulses, negative variation, cathodic closing, cathodic block, etc., but would not be fairly measuring the speed of normal cable currents. I think it is safe to say that the speed of the normal current in nerves has never yet been measured unless we consider the first part of the double current observed by Charpentier to be such. The *Revue Scientifique* describes this phenomenon as follows: "A short electric excitation produces a double transmission on the part of the nerve. One part is transmitted almost instantaneously as in an ordinary conductor." In experiments on the speed of sensory impulses, as well as motor, the time of relay and terminal mechanisms will have to be estimated and deducted. The fact is, I believe, that the experiments relied on as determining the velocity of nerve current, while ingenious, are relatively coarse, clumsy and inadequate for the gossamer tenuity of the neurons and the fine electric currents they normally evolve and transmit. We need finer experiments than these, and on living nerves, to demonstrate the normal currents. Tesla, in 1900, announced an electric invention sensative to the contraction of a muscle merely in the same room with it. This may indicate the direction of hope for methods fine enough for the demonstrations that we need.

But there is other evidence: There is available a series of what we may call natural experiments involving speed of nerve impulse which have not been studied to their logic conclusion in that regard, although physiologists have taken note of them in regard to fatigue, etc. I refer to the cases of rapid muscle movement in man, animals, birds and insects. It seems to me that the wing vibrations of insects, running up into thousands per second, invite study and imply at a glance greater speed of nerve impulse than the conventional figure. The pianist's movements have been noted but are complicated. Scripture of Yale is the latest to make some tests of fatigue, not speed, in key tapping by non-experts. I have made a study of a more rapid movement than that of the pianist's, who uses ten fingers and many muscles. The expert telegrapher in speed contests uses the same flexors and extensors of the hand throughout. Having to move his key through the smallest possible space he attains a speed of 54 words per minute. This gives a well-attested average of 11¼ flexions and 11¼ extensions, or 22½ vibrations, of the hand per second, sending the mixed Morse characters of average press words. Some of these characters are dots, as the letters e, i, s, h, p, and the figure 6; 1, 2, 3, 4, 5 and 6 dots respectively. As the dot is shorter than the dash or the space, it is made by motions faster than the average of 22½ vibrations per second attained in sending the dots, dashes and spaces. Experts think twice as fast, or 45 vibrations of the hand per second. This means a rate of 22½ contractions of the flexors and 22½ contractions of the extensors per second for the dots, with an equal number of muscular relaxations. It does not seem probable that a nerve impulse is traveling down the line to the flexors while the extensors are contracting, or vice versa, so that it seems fair to divide the time between the two motions, leaving half a second for 22½ impulses and flexions and half a second for 22½ impulses and extensions. The length of nerve from brain to forearm may be about 30 inches. This means that not only does a normal nerve impulse travel 30 meters per second, but that over 30 impulses pass over the same meter of nerve per second, which is a different thing. Some physiologists admit the probability that each muscle contraction is maintained by a series of nerve impulses like those of the induced current used to experimentally tetanize a muscle. If that is true, and I am inclined to believe it, then our 30 impulses per meter, or rather 45 impulses per ¾ meter, per second, have to be largely multiplied. But if you reject the view of series-impulses and insist on a make and break current the time of muscle contraction will have to be deducted to leave the time of the nerve impulse which induced it. Muscle action is a visible, tangible, mechanical, time-consuming phenomenon. Where the time of a single nerve impulse and a single muscle contraction is to be divided how much shall we apportion to the mechanical action and how much to the flight of the nerve impulse which induces it? Until this is accurately determined I can only conceive the relative time to be the same as that occupied by the electric current traversing a conductor and that occupied by an armature, or a muscle, in responding to its call. But in any way that this problem can be figured it shows that normal nerve impulses travel faster than 30 meters per second. In this calculation I have not doubled the length of current path for a return circuit, but that possibility should not be lost sight of.

Normal nerve force is not only, as I believe, vastly faster than has been supposed, but electricity may be much slower in action than its well-known maximum velocity. There is a lag in cables due to capacity, inductive static charge and the electric reaction of armor. Nerves are cables although they appear to be often treated in experiments as if they were single uninsulated conductors. There is a perceptible lag in poorly insulated land lines in wet weather due to escape, short-circuiting, etc. So, in comparing electricity and nerve

force the minimum speed of electricity should be considered. It may be further reduced by adjustment of relays, repeaters, condensers, terminal mechanisms, etc. I have thus endeavored to show that there is no such gulf between the speed of electricity and nerve force as has been supposed. In both cases the velocity may be materially affected by conditions and mechanisms. It seems to me that further investigation and experiment in this direction by well-equipped physiologists will fairly meet the principal objection to the electric concept.

NERVE INSULATION.

The telephone threw a flood of light on induction and insulation. When, on the telephone line through which I first heard speech, I also read the Morse of neighboring telegraph lines I realized that induction occupies a wider zone than had been previously dreamed of. When telephone currents came through lines so poorly insulated or badly grounded that the telegraph would have been mute I realized that insulation is indeed merely relative, and what we now know of high-frequency currents has further enlarged this view. At one time it was supposed that nerve force could not be electric because the nerves were not insulated as in glass or gutta-percha. We now know that less insulation will suffice as for fine telephone currents.

NERVOUS AND ELECTRIC SYSTEM ANALOGIES.

The analogy between a single axone with its myelin sheath and an electric conductor with insulation is so obvious that I will not dwell on it, but will have something to say on insulation further on.

The analogy between a telegraph or telephone cable and a nerve cable armored with its sheath and containing numerous axones, each with its own myelin covering, is still more striking. The use of both is the same—communication, or the transmission of force.

Nerve and electric units will be compared farther on in this paper.

The analogy between nerve relays and electric relays is most significant; their purpose is the same, their mode of action is similar; there is variety of form in both, more apparent in electric relays because they are more familiar and more easily dissected.

Nothing can be more wondrously analogous than the multiple switchboards of the spinal cord and higher centers with those of the telegraph and telephone. Analogies may be traced in multitudinous terminal mechanisms of electric and nervous systems, and at both termini, that is, at sending and receiving ends of the circuits. We find analogy and, I believe, identity in the form of force energizing nervous and electric systems. We find, I believe, analogy in the speed of this force. We find more than analogy in the ensemble of force, velocity, conductors and mechanisms. We find identity of plan, purpose and use in nervous and electric mechanisms.

A galvanic cell no larger than a cartridge shell may work an ocean cable. The simplest concept of an electric unit is such a cell with a conducting circuit. Electric systems are built up of such units. The simplest concept of a nerve unit is a nerve cell: its dendrites, axones and collateral branches. The whole nervous system is built up of such units and these neurons evolve, transmit, repeat to each other and exchange through multiple switchboards the impulses necessary to the complex system of communication in the living body. The analogy between nervous and electric units is not merely in appearance, there is identity of purpose and use, namely, to generate and transmit force. In the electric unit the force is electric. In the neuron it gives electric manifestations as shown by the electrometer. Why is it not electricity? The gymnotus and some other fish produce and use electricity on the large scale as a defensive or offensive force; their electric cells are probably storage batteries. (Storage batteries do not retain or contain the electricity pumped into them; by it they are only placed in the chemical position to produce electricity. They would be better called secondary batteries.) If these fish produce electricity in organic cells and operate it through their nervous mechanism for purposes of warfare, it must be admitted that Nature can evolve electricity in organic cells and utilize it for peaceful purposes in the domestic economy of animals. She seems to have taken great care to provide a fine and complex mechanism for it. Nature's technic is not meaningless.

There have been cases of excessive production of electricity in human beings. Physiologists find in nerve cells two substances stainable respectively by acid and basic dyes; this indicates galvanic possibilities. Barker, in his great work, "The Nervous System," says that he rather favors Von Lennhosek's view, as follows:

> We can very well conceive of a variety of excitation, which, starting from the cell, perhaps even from the nucleus, streams constantly through the axone and in it in some way, perhaps by a process comparable to electrolysis, maintains the chemical conditions suitable for the assimilation of the nutritive juices.

If eminent physiologists can conceive this can we not conceive a fine current of electricity; not enough to work an Atlantic cable, nor needing a mammoth battery so vast as a gun-cap to produce it, but of sufficient e. m. f. to work a nerve cable a few thousand miles shorter and needing nerve cells proportionately small to generate it? True, the physiologists refer to trophic processes, but if we conceive such a current for nutritive purposes why not for the obvious and appropriate purpose of communication.

If we take an electric unit and place an electro magnet, chemical paper, any one of a hundred terminal mechanisms, say a muscle, in the circuit, the kind of work done will depend on the mechanism of the terminal. The same is true of the nerve unit and argues that the communicating force is the same. It will suit my rude notions of these analogies better and make my conception of them easier if you can admit the existence of complete, or return, circuits. Recent investigations show that not only are there probably two filaments sent to each terminal organ, but every axone has numerous collaterals. Groups of cells have intimate relations, and connections are, according to the neuron concept, contacted by variable resistances; besides these paths there are general return circuits possible, like in the telegraph and telephone. Endowed with motility the dendrites make contact by different paths for the nerve current through the nerve centers, thus doing automatically what the operator does at the telephone switchboard when she connects different subscribers. The analogy may seem even closer than this in the case of automatic telephone exchanges requiring no operator, but I do not mean now to suppose electromagnetism in the nerve repeaters, but rather that their elements react on each other like galvanic elements in a battery or, by induction, like condensers, transformers, etc. In alternating circuits the transformer repeats from one line to another and converts the current to a higher or lower voltage. Every induction coil is a repeater. The electric condenser relays, retards and intensifies discharge. The effect is varied if the plates approach or recede; doubtless the same is true of the nerve processes.

The question of insulation is important to the electric concept. There is probably no absolute insulation anywhere; it is relative; a matter of degree. Let me illustrate: A man was killed on a lamp pole by an alternating current of 2,800 volts. I traced the current from the wire through his spur, body, hands, to the metallic braces of the mast-arm, where it divided, part going down the pole and part through the metallic mast-arm and manipulating rod to a spike in the pole within ten feet of the ground, thence by the pole to the ground. On testing the escape through the pole by inserting an electric bell wire in it a few feet from the ground and grounding the other end of the bell circuit the escaping current rang the bell. In military telegraph experience during the Civil War I have not only worked successfully through badly insulated lines, but through some grounded intentionally for obstruction. A portion of the first Atlantic cable, used across Chesapeake Bay in 1862, furnished me varied experience in poor conduction, bad insulation and slow work. With the telephone when the old ground return was used I have heard speech when the line sometimes lay on the ground. With such a wire of twenty miles so badly insulated and grounded that speech became indistinguishable in the receiving diaphragm I have yet kept up communication by the simpler Morse signals through the more sensative telephone mechanisms. Communication has been had through a mile or more of water not insulated from the earth which formed the other side of the circuit; this by means of the Morse language and telephone instruments. Wireless telegraphy scorns insulation. Whatever theory others may have of it, mine is that there is a complete circuit, the earth forming one side of it, the atmosphere the other, and Marconi has worked it across the Atlantic without insulation. So, I say electric insulation is merely relative, the degree required depends on the kind of current, the purpose and the mechanisms used. If nerve force is not electricity, what other form of force is it that could be better kept insulated in the axones?

In considering insulation, relays and switching, I quote the following from Lombard in the American Text-book:

> The axis-cylinders of the many fibers which run side by side in the nerve trunk are separated from each other by the neurilemma and, in the case of the medullated nerves, by the myelin substance as well, so that there is not even contiguity, much less continuity of nerve substance. Thus the fibres of a nerve trunk, some afferent and others efferent, though running side by side, conduct independently of each other. For example, if the skin of the foot be pricked, the excitation of its sense organs is communicated to sensory nerve fibres, and is transmitted along them to the spinal cord, where the stimulus awakens certain groups of cells to activity; these cells in turn, by their branches, the motor nerve fibres, transmit the excitation down to the muscles of the legs, which . . . contract and withdraw the foot from the offending irritant. The sensory and motor nerves concerned in this reflex act run for a considerable part of their course in the same nerve trunk, but the sensory impulses have no direct effect on the motor nerve fibres, and the round-about course which has been described is the only way by which they can influence them. It is probable that isolated conduction by separate fibres and their branches holds good within the central nervous system as elsewhere, otherwise we could scarcely explain the localization of sensations or coördinated movements. It is possible that within the central nervous system the neuroglia may act to secure isolated conduction.

This is an admirable description. What is this system of conduction and isolation for? What force is it intended to convey? Can it be anything but electricity? There is said to be more than 50 per cent. cholesterin in the solids of gross nerve tissue; it is probably mostly in the myelin sheath; it is an insulating substance; the conductors are very small, 1/1200 of an inch in diameter and smaller; the current needed is very fine if a battery of percussion caps may work an ocean cable. Nature has taken such exquisite care to keep these myriad conductors separate as she weaves them in skeins and tracts and plexæ in their course through her multiple switchboards that I can conceive the force they carry to be none other than electricity. Please note the apposition of axones of opposite polarity, so well described by Lombard, and which is found quite general throughout the nervous system, and compare it with the ingenious method of transposition of wires by which electricians have successfully endeavored to neutralize induction in telephone cables and air lines. In this, as in many other things, they seem to have unconsciously imitated Nature, and I have no doubt that the decussation and transposition of conductors has, in part, the same intention and the same effect in both nervous and electric systems: namely, to neutralize induction.

The sympathetic system is peculiar as to insulation; its axones are generally unmedullated, but they have sheaths. Gotch & Horsley[3] found larger electric currents in non-medullated than in the medullated nerves, explained by Lombard by the fact that non-medullated nerves contain a greater number of axones than medullated nerves of the same size. The sympathetic system has a general function to perform: to maintain the tonicity of involuntary muscle and influence secretion. Compared with the cerebrospinal system I regard it as a storage, or secondary, battery and practically monofunctional. In that view it is unnecessary that its axones should be so perfectly insulated from each other as are those in the central system where the individual circuits have to convey special messages like private wires.

I trace analogy of mechanism and identity of function between tactile papillæ, Meissner's corpuscles, *tastzellen* and other nerve beginnings, and electric variable resistances, microphone transmitters and other sending mechanisms, some of which are almost as sensitive to the slightest compression as are the nerve organs. Electric conductivity, or its opposite, resistance, is varied enormously by the slightest pressure in the Blake, or long-distance transmitter, and the coil of nerve fiber in one of these nerve-sending mechanisms seems adapted to the same purpose and, indeed, fulfills it whether you admit that nerve force is electricity or not. The touch of a hair is appreciated by the microphone and by the nerve key; electric conductivity is varied in the microphone circuit sufficiently to affect an electro-magnet and translate the impressions into audible sound by the vibrating diaphragm; electric or nerve conductivity is varied in the touch corpuscle sufficiently to send a current through the nerve relays to the sensorium. I can not conceive any form of force that would respond to these mechanisms in either case but electricity.

Permit me to quote an occasional line of description from your latest text-books, especially from Barker's admirable work, and to flash a little electric light on it as we pass. Barker says: "A single neuron of one system is by virtue of a number of end ramifications able to enter into conduction relations with a number of neurones in the next higher system, . . . and per contra the terminals of a larger number of axones of one system may be arranged to influence only a small number of

3. Philosophical Transactions, 1891.

neurones of a neuron system of the next order." This in the light of electricity describes a multiple relay system of transformers through which not only signals are repeated, but force is diffused or concentrated. In other words, step-up or step-down transformers changing the e. m. f. of the current.

"Cutaneous sensory fields overlap" (Barker). That is, they are herringboned by nerve filaments reaching neighboring segments of the spinal cord, like two or three telephone systems in the same town and having the same subscribers, so that injury to one conductor will not prevent the subscriber, say a tactile push-button, from ringing up Central.

"Four qualities of sensation are mediated by the skin and apparently by specific sense organs, cold, warmth, touch and pain." (Barker.) This does not mean that the sensory nerves need differ from each other, nor from motor nerves except in polarity; nor that the force traversing them need be anything but electricity to convey these different impressions. The difference is in the terminal mechanism. The same sort of wire, the same electricity translates, conveys and reproduces musical tones, the composite vibrations of articulate speech, the Morse language, handwriting, print, pictures, light, heat, the *x*-ray, and so on, all depending on the terminal mechanism.

"A centripetal impulse, originating at the periphery, reaches the primary end station of the sensory neurones inside the central nervous system after passing through only one neurone." (Barker.) That is, it reaches the suburban exchange in the spinal cord, where the dendrites and cells that represent the Hello Girl automatically make the connections for local and long-distance communication.

"It was long thought that these peripheral end organs contained ganglion cells, but that view," says Barker, "has been proved to be false." This, to me, means that the battery is not in the touch organs of the skin, etc., but is in the individual neuron; in fact, in the local central, where it ought to be; and these end organs, whether tactile papillæ, platelets, free endings, Ruffini's or Pacini's corpuscles, end bulbs of Krause or others on the sensory side, are sending mechanisms; keys, push-buttons, variable resistance transmitters, etc., such as we find in telephones, cables, telegraphs, electric bells and the like; and they operate in the same way.

"The number of nerve fibrils in ordinary epithelial structures is enormous. It would appear that almost every epithelial cell stands in contact relation with one or more nerve fibrils, and perhaps this may be true of all epithelial cells." (Condensed from Barker.) This shows a distribution of conductors sufficient for the phenomena of sensation to be electrical.

Let us glance at a point or two on the motor side. "Each of the separate muscle fibers is supplied by at least one nerve fiber, and under normal conditions only acts when stimulated by the nerve." (The American Text-book.) On this point I said, in my paper to the Lackawanna County Society in May, 1900, that "The fact is, I believe, that every muscle unit is surrounded by an electric field of force, disturbance of which causes it to contract; and the same is probably true of every protoplasmic unit." Thus anticipating Professor Loeb's announcement on that point by nearly two years.

"The motor nerve fibers to the muscles terminate in end plates." These motor terminal organs I regard as nerve electrodes which distribute and retard the current. One more word about retardation. For an impulse from toe to brain and back to muscle there are three to ten relays from neuron to neuron, and at different levels in the switchboard of the cerebrospinal axis such an impulse is switched across to the motor side or co-ordinated. These relays, conditions of insulation, electric reaction of cables, galvanic elements in nerves; resistance in conductors, relays, end plates, etc.; all these factors are concerned in the time element of nerve conduction, and they are all electric factors. The limit of one paper will not permit further tracing of analogies.

Is it not significant that you find it necessary in your best text-books to adopt electrical terms? You speak of "Storage of Energy," "Discharge of Energy," "Currents," "Cells," "Conductors," "Resistance," "Induction," "Dynamic Polarity," etc. I hope you will soon find it right to adopt "Electricity" for "Nerve Force," which is a name that has sprung as a sort of *filius nullus* from "Vital Force," inheriting a little of its supernatural attributes. Seriously, I mean that many seem to regard nerve force as something beyond a natural form of force.

It is in considering the nervous system as a whole that the analogy to electric systems of communication appears most striking. When, fresh from the study of a great work, like Barker's, I picture the nervous system and its mechanisms in living action before my mind, I see beside it the central telegraph system of New York or London, with its radii of lines and cables, telephonic and telegraphic; its multiple switches, batteries, relays, transformers, condensers, resistances, shunts, duplex and automatic circuits; all this mechanism, like the nervous system, transmitting force and translating intelligence from point to point by terminal instruments which move, talk, write, print, light, inhibit, accelerate and regulate, and in a hundred ways doing what is done in the nervous system, and always by means of the same force, the only form of force capable of such vast and varied service.

IMPORTANCE OF THIS CONCEPT.

If the proposition can be accepted that nerve force is electrical it will, I think, advance knowledge. From that point investigators will take a new departure to explore with new light the functions of the nervous system and other scientific fields. Dr. F. Savary Pearce, who approved these views expressed in my papers of 1900, has found the electric and neuronic concept useful in interpreting the manifestations of some diseases of the brain and nervous system.[4]

Professors Loeb and Mathews, advancing from the chemical side, arrived at the point where they found that muscle and nerve force is electric, and at that point we met; I having reached it before them from the electric side by other, but, I think, as certain paths. I have not presumed to invade the technical field of biologic chemistry, in which Professor Loeb has done such admirable work, further than indicated in this paper. I will leave it to Professor Mathews and others to elucidate his views as to the particular form of electricity he finds nerve force to be. If his ingenious view that it is electrolytic can be accepted it will make it still easier to account for the time element in nerve conduction.

SUMMARY.

The construction of nerves has been closely, though unconsciously, imitated in electric cables.

Experiments on nerves should be interpreted according to the electrical peculiarities of cables, and not as if they were bare conductors.

4. See, for instance, his paper, "Some Points on Intracranial Neoplasms, etc.," read at the New York Academy of Medicine, May 21, 1901. Phila. Med. Journal, Nov. 16, 1901.

Nerves are insulated, distributed and arranged like fine electric conductors.

Their purpose and use are the same as the purpose and use of electric conductors, namely, communication from point to point.

They convey some form of force, and there is not such a gulf between its velocity and that of electricity as has been supposed. This force must be electricity because:

1. Electricity is always present when nerves act.

2. Electricity is the form of force that would do the work required. It is the form of force that would work with such construction.

3. Because the terminal and central mechanisms connected with the nerves correspond to the terminal and central mechanisms connected with electric systems of communication and do similar work in sending, receiving, relaying, switching, transforming, accumulating, retarding, distributing and translating impressions.

4. Finally, because electricity, with such construction of conductors and of terminal mechanisms is the only form of force that we know of that would do all the work required.

I therefore maintain that nerve force is electricity, and that it would advance knowledge of the nervous system and its functions to accept this proposition.

These views were regularly presented to medical societies in 1900 and published in the *Pennsylvania Medical Journal* in November, 1900. If they are considered worthy I should value some acknowledgment of their method and priority. The conclusion that nerve force is electricity may have been guessed at before, and some analogy must have been noted by all observers, but I think my papers covered more ground and brought more evidence together than could have been done before, and first clearly stated the logical necessity of the electric concept.

THE ABSORPTION OF ALBUMINS AND GLOBULINS.*

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DETROIT.

As albumins are non-dialyzable it was supposed until within recent years that they could not be absorbed as such, that they must be digested. The practice of rectal feeding has disproved this. Considerable quantities of undigested albumins are absorbed apparently unchanged.

Is there any such absorption from the stomach or small intestine? Using the ordinary albumins of food it is about impossible to determine this point. Give an albumin by the mouth and attempt to find it unchanged in lacteal or blood vessel—it is all but impossible. The text-books usually state that antitoxic serums given by the mouth are of no value, that antitoxin is destroyed by the process of digestion. This is probably true. It is certainly true that in artificial digestion, as carried out in the laboratory, the antitoxic power disappears.

But may there not be a part of the serum absorbed without undergoing digestion? I believe so. Ehrlich and his co-workers have shown that a suckling may receive a certain degree of immunity from the milk of an immunized mother, i. e., the antitoxin passes into the milk and is absorbed unchanged.

This is the only rational explanation of the well-known phenomenon that the suckling is relatively immune to a number of diseases that attack the older child.

Carrier, as the result of a series of experiments made in the Pasteur Institute, concludes that antitoxin is not affected by ptyalin, that it is slowly destroyed by gastric digestion and rapidly by pancreatin digestion. The clinical experience of some practitioners, who persist in giving antitoxin by the mouth, led me to undertake some experiments on this line. The results I have thus far obtained are far from satisfactory, but they are possibly worth recording.

I gave guinea-pigs hypodermic injections of diphtheria toxin of known strength. The antitoxin was given per stomach, at times before and again immediately after the administration of the toxin. On giving the antitoxin the mouth of the animal was pried open, a few drops of the serum were placed well back in the mouth and forced swallowing was attempted. It was impossible to tell how much was swallowed and what was wasted. Later the serum was forced from a syringe through a tube introduced into the stomach. This is a very difficult procedure with guinea-pigs, owing to the size and shape of the upper part of the alimentary canal.

In one experiment 12 pigs were given varying amounts from 600 to 3,000 units of antitoxin, on the following day they were given 10 to 30 times the minimum fatal dose of toxin. All died.

In another series of 7 pigs, all received about 1,000 units of antitoxin in the morning, in the afternoon 5 of these received another dose, the next day they were injected with from 2 to 10 times the minimum fatal dose of toxin. The 5 pigs receiving the double dose of serum lived, the 2 having but one treatment died.

In the next series 7 pigs were given respectively 2, 5, 10, 15, 25, 50 and 100 times the minimum fatal dose of toxin. They then had 1,000 units of antitoxin per mouth; of these the ones receiving 15 and 100 doses of toxin died, the remainder lived.

The next series of 5 pigs received 2, 5, 10, 15 and 25 fatal doses of toxin. They then had two doses of 5 c.c. each of serum per rectum (much of which was not retained). Of these the two having 15 and 25 fatal doses of toxin died, while three lived.

Seven pigs were kept without food for 16 hours; they then received 1,000 units of antitoxin and toxin in amounts from 10 to 100 fatal doses. One pig receiving 10, another 100 doses of toxin lived, 5 died.

In the next series 10 pigs were given .1 c.c. of a bouillon culture of diphtheria germs; of these 5 were given 1,000 units of antitoxin; of these 4 died. Two were given 2,000 units of antitoxin; these lived; 3 were untreated and died.

It is to be noted that in all of these experiments the pigs received enormous doses of antitoxin, a half-pound guinea-pig receiving an amount that usually suffices for a 50-pound child. But it must also be noticed that they received large doses of toxin; further, that the alimentary canal of these animals is not accustomed to the digestion or absorption of animal proteids. The experiments are of more physiologic than clinical interest.

Ehrlich has shown that the proteid poisons, abrin and ricin, are absorbed and produce their immunizing effect when given by mouth. Frazer demonstrates a like action with snake venoms. We know that the active principle of the thyroid passes into the circulation from the alimentary canal. Apparently the active principle of the suprarenal gland resists digestion and is absorbed as such.

These experiments appear to show that under certain conditions antitoxic serum may be absorbed as such, but

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*Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. A. Winfield S. Hall and Frank B. Wynn.

the variations are so great in the experiments recorded, the results so uncertain, that one could not recommend the method for use. As the serum can be absorbed under exceptional conditions at least, I then began a series of experiments to try and determine what were the conditions necessary for absorption. These experiments are not yet completed, but the results have some interest, and I will give them in brief.

In the first series dogs weighing approximately 10 kilograms were used. The stomach was emptied with apomorphin and the bowels with saline previous to operation. Ether was used as the anesthetic. The abdomen was opened, the stomach and selected parts of the intestines were washed out with normal saline at body temperature. The stomach was tied off at the pylorus, and, after the introduction of the serum, the esophagus was tied. Three sections of the intestines were used: one in the jejunum below the opening of the pancreatic duct, another at the end of the ileum, and the other in the rectum. The intestinal loops were 11 cm. long, and, in so far as possible, their mesenteric attachments were unimpaired, rough handling was avoided, and, after the introduction of the serum, the organs were returned to the abdomen, the opening closed and the abdomen kept warm. After the serum had been in the various organs for one hour, the amount remaining was removed, and the amount of absorption was determined by precipitating the remaining albumin, drying and weighing.

The first experiment was with 0.6 per cent. sodium chlorid. Of this there was absorbed in the one hour from the stomach 36 per cent., from the jejunum 70 per cent., ileum 50 per cent., rectum 75 per cent.

The next experiment was with diphtheria antitoxin. This was diluted with 0.6 per cent. sodium chlorid, in some cases using 3 volumes of this to 1 of serum, in other cases 4 to 1. In the stomach was placed 125 c.c. of this mixture, in the loops of the intestines 20 c.c. After one hour 55 per cent. of the albumin was absorbed from the stomach, 45 per cent. from jejunum, 40 per cent. from ileum, 40 per cent. rectum.

In another like experiment with normal horse serum, the absorption was from stomach 48 per cent., jejunum 59 per cent., ileum 60 per cent., rectum 54 per cent.

I then tried to see the influence of various drugs and medicines on the rate of absorption. With sherry wine, the mixture containing 25 c.c. antitoxin, 62½ of wine, 37½ of .6 per cent. sodium chlorid the absorption from stomach was 45 per cent., jejunum 45 per cent., ileum 50 per cent., rectum 18 per cent. The mixture used in the above experiment contained 20 per cent. alcohol.

In a mixture containing 5 per cent. of alcohol the absorption from stomach was 55 per cent., jejunum 60 per cent., ileum 60 per cent., rectum 51 per cent. In a mixture containing 20 per cent. of brandy, or 10 per cent. of alcohol, absorption from stomach was 50 per cent., jejunum 70 per cent., ileum 85 per cent., rectum 73 per cent.

Next a mixture with a small per cent. of oil of peppermint was tried, and the absorption from stomach was 45 per cent., jejunum 76 per cent., ileum 73 per cent., rectum 45 per cent.

Next tincture of opium was added. The mixture placed in the stomach contained 2 c.c. of this in 125 c.c., that in the intestine 1 c.c. in 20. The rate of absorption was as follows: From stomach none, jejunum 80 per cent., ileum 70 per cent., rectum 60 per cent. A second dog gave stomach none, jejunum 64 per cent., ileum 71 per cent., rectum 69 per cent.

In the next experiment chloretone was used. One hundred c.c. of a saturated aqueous solution, 25 c.c. of serum in stomach and proportional amounts in intestines. Absorption from stomach was 38 per cent., jejunum none, ileum none, rectum none. On a second dog there was absorbed from stomach 38 per cent., jejunum 3 per cent., ileum none, rectum none.

With 10 per cent. glycerin absorption from stomach was 2 per cent., jejunum 30 per cent., ileum 24 per cent., rectum none. With 15 per cent. absorption from stomach was none, jejunum 27 per cent., ileum 9 per cent., rectum none.

A mixture containing, as usual, 25 c.c. of serum to 100 of normal sodium chlorid, had added to each of the sections of the alimentary canal 1/100 of a grain of atropin. Absorption from stomach was 12 per cent., jejunum 56 per cent., ileum 61 per cent., rectum 59 per cent. Second dog gave stomach 9 per cent., jejunum 64 per cent., ileum 58 per cent., rectum 54 per cent.

In the next experiment carbonated water was used instead of ordinary water. Absorption from stomach was 85 per cent. A second dog gave 80 per cent. The next dog with carbonated water gave absorption from stomach 58 per cent., jejunum 76 per cent., ileum 95 per cent., rectum 68 per cent. Another gave from stomach 60 per cent., jejunum 73 per cent., ileum 93 per cent., rectum 45 per cent.

In the next experiment the dog was starved several days to clear the intestinal canal. The mixture was introduced into the stomach with a catheter, no anesthetic being used. In this case there was no means of telling the amount of serum that had escaped from the stomach into the intestines. After one hour 56 per cent. of the albumin introduced had disappeared from the stomach.

The next dog was starved several days and then given a large dose of sodium sulphate to flush out the alimentary canal. A dog starved for the same length of time but without the purgative was used for comparison. There was absorbed from the stomach in the one without purgative 53 per cent., with purgative 60 per cent., jejunum 48 and 57 per cent., ileum 45 and 60 per cent., rectum 50 and 66 per cent. The average absorption after starvation was 49 per cent., and after starvation with previous flushing with sodium sulphate 61 per cent.

In the next three dogs sodium bicarbonate was added to the mixture. In the first and second dogs 2.5 per cent. of sodium bicarbonate the absorption from stomach was respectively 85 and 82 per cent. In the third dog 5 per cent. sodium bicarbonate was added and the absorption was 72 per cent.

In the guinea-pigs the absorption from stomach alone with normal serum and water was 60 per cent., with carbonated water 73 per cent., small amount of sodium bicarbonate 91 per cent., larger amount 65 per cent. The averages were taken from 6 guinea-pigs with each of the different solutions. The average absorption of egg albumin using 6 pigs, was 80 per cent.

These experiments are being continued. So far they appear to show either that antitoxin is not absorbed in the same proportion as the total albumins of serum, or is changed in being absorbed, the majority of the pigs dying when injected with several times the fatal dose of toxin, despite a large absorption of albumins. The result of this I will report later.

DISCUSSION.

DR. W. BECKER, Milwaukee, Wis.—Two years ago I attempted to get some knowledge as to toxins which are formed

in dilatation of the stomach, chronic gastritis, and similar diseases of the stomach. I found that if these filtered toxins were introduced into the venous circulation or subcutaneously into an animal they caused vague and unreliable symptoms, but if they were introduced into the stomach of a dog which had previously been washed with alcohol they showed very regular symptoms. I was compelled to drop the work and nothing was recorded. The introduction of alcohol favors the absorption of toxins on account of its paralytic action on the cells of the stomach. This much can be deduced by the experimental work I did, and it agrees perfectly with the work done by Dr. McClintock.

MODIFICATION OF THE CONNELL SUTURE.

RAYMOND CUSTER TURCK, M.D.

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CHICAGO.

Any method of intestinal anastomosis to be of value must, or should, combine, first, an absolute insurance from primary leakage of bowel contents; second, permanent strength of intestinal union; third, preservation of bowel lumen without creation of diaphragm; fourth, simplicity and rapidity of insertion. The fourth condition, however, is of relatively minor importance.

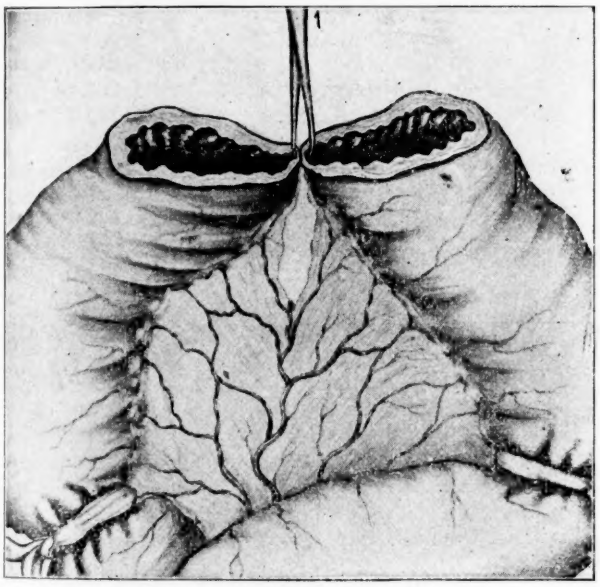

Figure 1.

At the Post-Graduate Laboratory of Anatomy and Operative Surgery there have been performed by the faculty and students, during the past three years, over 2,000 intestinal operations on living dogs, the results of which have been more or less carefully noted. In the course of this series practically all known procedures for the suture or anastomosis of all portions of the gastro-intestinal tract have been worked out, and their advantages and disadvantages demonstrated.

It is not out of the way to state here that work on the dog is a much more severe test of sutures, or of an intestinal operation, than work on the living human. From a somewhat extended experience in animal experimentation, and some experience in hospital and surgical work and surgical observation, I can unhesitatingly say that any intestinal operation which can be performed successfully on the dog can be performed with infinitely greater success and safety on the human being.

It is apparently a popular impression that one may do any kind of rough or septic work on a dog with no bad results, and that is more or less true outside of the abdominal cavity. The dog is peculiarly predisposed to peritonitis from leakage or infection. One may, however, do any intestinal operation on a dog in a barn without regard to asepsis, and the dog may live, but to obtain results the dog's peritoneum must be handled with care and with greater regard for cleanliness and asepsis than that of the human. The dog will not recover, as does the human in the great majority of cases, after dirty intestinal work with faulty suturing.

The human peritoneum may be soiled with pus in pyosalpinx operations, or in appendicitis, or in work on the gall bladder, or in pelvic abscess, with no bad result in many cases; but minute infection will almost invariably cause death of dogs from general septic peritonitis.

Even the mortality from the use of the interrupted Lembert suture in intestinal anastomosis on the human is small, but that form of suture is extremely unsafe and inefficient when applied to bowel work on the dog, it being impossible to prevent leakage of bowel contents, with subsequent death from peritonitis in over 35 per cent. of cases, unless the Lembert is used as Halsted's modification (i. e., Halsted's mattress suture) with the stitches placed very closely together or interlocked (author's interlocking stitch). Any form of continuous suture which embodies the Lembert principle of inversion of cut edges and union of a relatively broad peritoneal surface is greatly superior to any form of interrupted suture, unless interlocked, so far as primary or secondary safety from leakage is concerned. The right-angled Cushing suture is the best of the continuous forms yet devised.

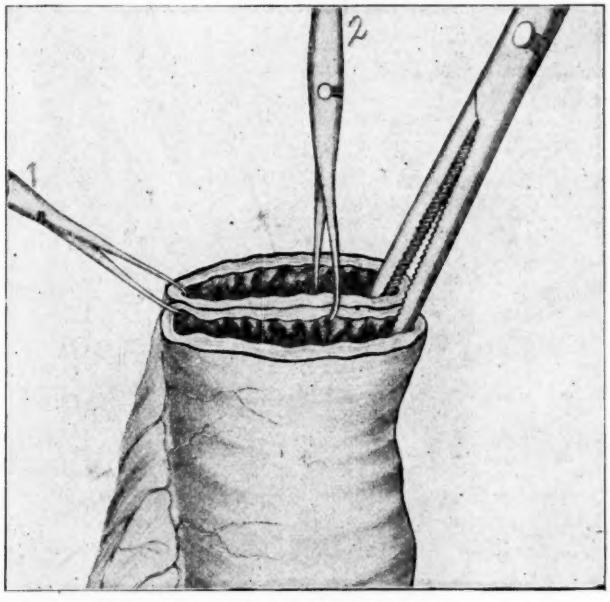

Figure 2.

The mortality from the use of the Lembert, or Czerny-Lembert, or Halsted, or other varieties of sutures now largely in vogue is reasonably small, and the results obtained therefrom comparatively good, yet there are forms of suture infinitely superior, and were it not for a tendency to stick to the good, old and tried methods the mortality would be less and the results better. Few operators have not had deaths from peritonitis, the re-

sult of leakage. A death from leakage in intestinal anastomosis under ordinary conditions in this advanced stage of surgical science is never justifiable nor excusable.

It has been demonstrated that, all conditions being equal, through-and-through sutures, i. e., those passing through all coats of the bowel, give greater holding power, better approximation of serous coats, greater ease of application and better primary and secondary union than sutures which include only the outer bowel tunics.

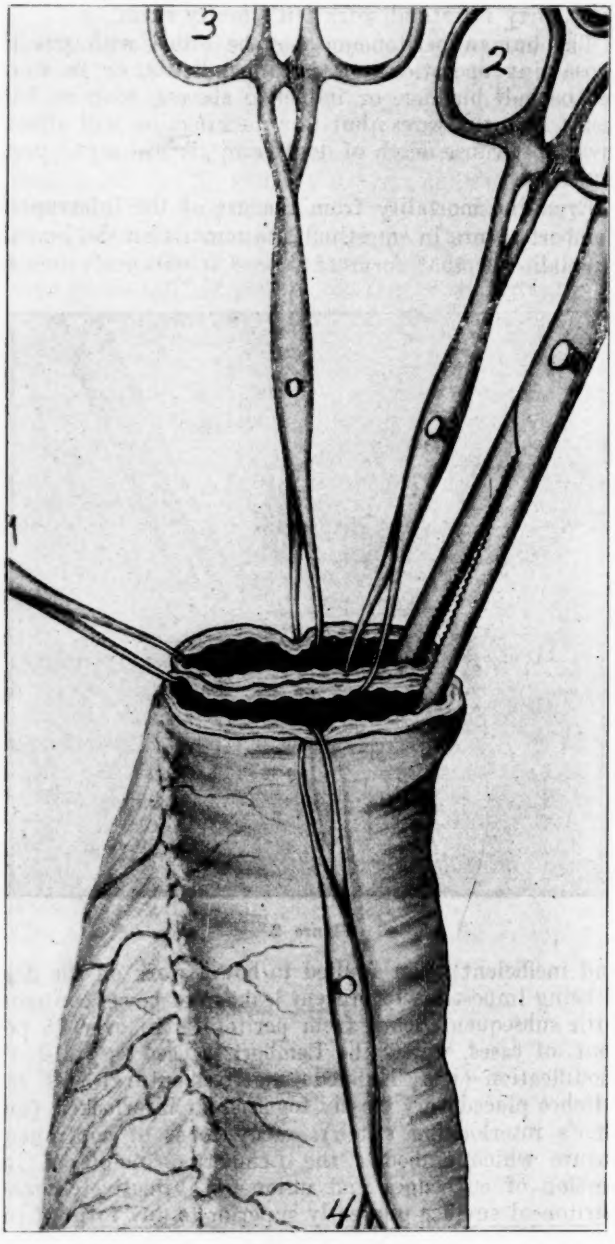

Figure 3.

The suture which is supposed to avoid the mucosa is never uniform, even in the hands of the most experienced operator; while it should include only the serous, muscular and fibrous coats, more often it includes or penetrates the mucosa, or misses the strong fibrous tunic and often has an extremely weak bite in the muscular coat.

The most valid objection to the through-and-through suture is that of infection traveling from within the bowel along the suture to the peritoneal cavity. The Lembert or Halsted may be open to this objection because of the frequent penetration through all of the bowel wall.

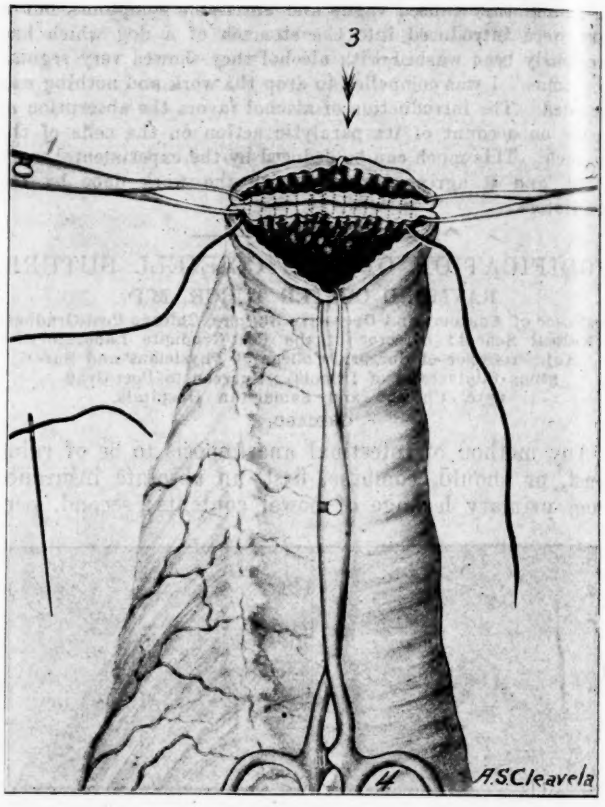

Figure 4.

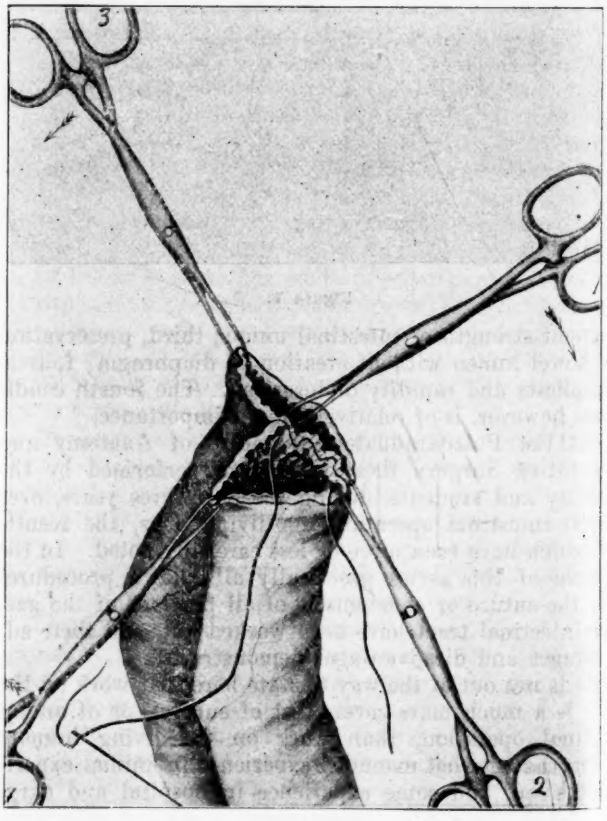

Figure 5.

With the through-and-through suture so placed that that part of it which appears in the peritoneal cavity

is practically of no moment, and with all knots and loose ends on the inside of the gut, no valid objection to it can be raised, and it appears as the safest, strongest, easiest and best of all sutures for the union of divided intestine. This was recognized by Maunsell, and the Maunsell operation for end-to-end anastomosis resulted. The Maunsell operation, however, is complicated and relatively difficult—it requires much manipulation of bowel, and even with extraordinary care there is always grave danger of peritoneal infection during the course of the operation from exposed mucous areas and bowel contents. The aim of the Maunsell operation and its *raison d'etre* is an approach to perfection, but the application of its principles admits of much improvement.

The suture devised by Dr. F. Gregory Connell is a modification of Maunsell's; it embodies the principle of through-and-through stitching, with very firm primary and secondary sero-serous approximation, with prac-

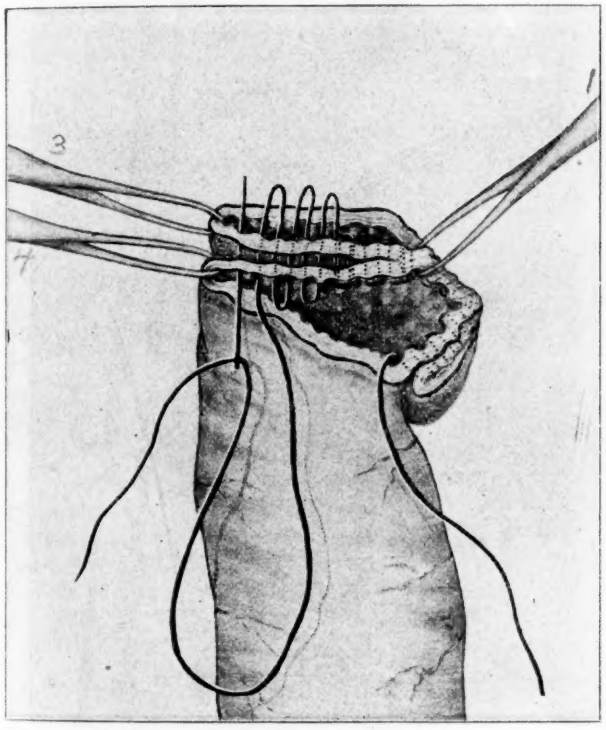

Figure 6.

tically no suture material leading from the inside of the gut to the peritoneal cavity, and with all knots and loose suture ends on the inside of the bowel.

The method of procedure greatly lessens the manipulation of gut and risk of infection, and does away with the Maunsell inversion of both bowel ends through an opening in the side of one bowel loop. The Connell suture is simple and easy of application when once thoroughly understood. Students have done a complete end-to-end anastomosis by the Connell method in eight minutes. At the Post-Graduate Laboratory there have been done by the faculty, by students working under a demonstrator, by students working alone and by independent investigators, over 400 end-to-end anastomoses by the Connell method with a mortality of less than 3 per cent. At the hands of experienced operators and those of our students who have taken courses in abdominal surgery, with the Connell suture properly applied, the mortality directly traceable to the anastomosis, *per se*, is ***nil***.

The Connell suture has been used on the human with unvarying success by operators who have understood it and who have properly applied it. No deaths have yet been reported as due to faults in the method.

The writer has heard and read a very few harsh criticisms of the Connell suture; that it was difficult to apply; that the inversion of the cut edges of the bowel during the last stage of the suturing was incomplete; that the union at the mesenteric border was unsafe, and that the tying of the last knot was altogether a complicated and unwarranted procedure and one on which

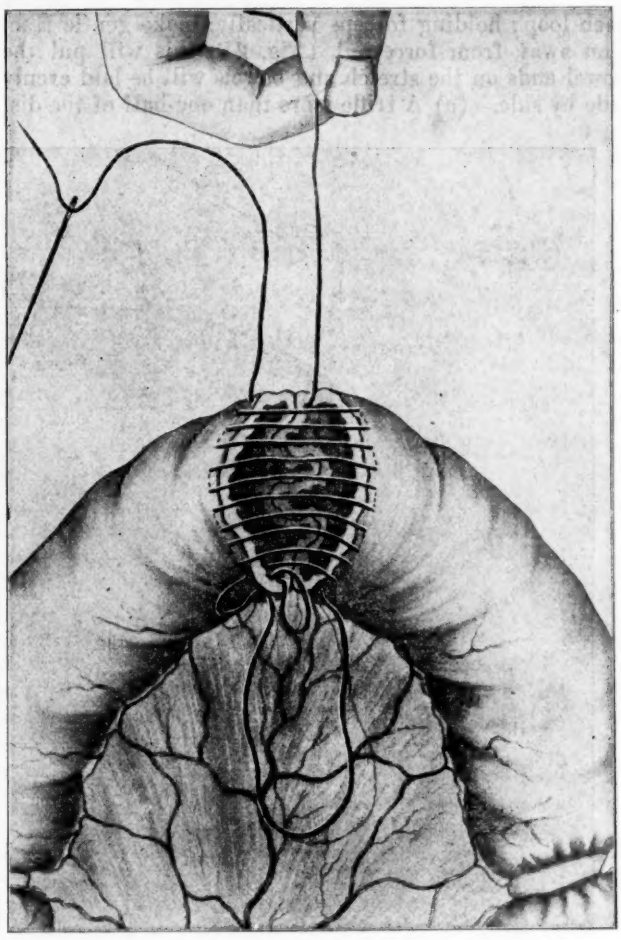

Figure 7.

no self-respecting and busy man could afford to spend time in mastering. A careful study of the method, a résumé of the work already done and the results obtained therefrom quickly demonstrate that the fault lies, not with the method, its technic, or its practical application, but in the lack of understanding and knowledge of the critic.

The Connell method of suture is not easily understood unless actually demonstrated or performed on intestine. It is difficult to illustrate or describe in a way which will show its simplicity and not confuse the reader. The most confusing features, in its description as well as in its actual application, is the method of placing the four tension sutures, which are of no importance so far as the vital principles are concerned, and the method of tying the last knot so that the knot will be on the inside of the gut.

The writer has modified a form of small tenaculum forceps (Fig. 11) which do away with the tension sutures

to good advantage in manipulation and understanding, and has devised a ligature carrier (Fig. 12) which simplifies the tying of the last knot.

The steps of the operation for end-to-end anastomosis are as follows:

First Step.—(*a*) Bring the mesenteric borders of the bowel ends together, as shown in Fig. 1. (*b*) Take a small bite with forceps 1 through both bowel ends immediately at the mesentery (Fig. 1), close forceps.

Second Step.—(*a*) Hold forceps 1 in left hand, lay bowels side by side (Fig. 2). (*b*) Have an assistant insert one blade of an ordinary hemostatic forceps in each loop; holding forceps vertically, make gentle traction away from forceps 1 (Fig. 2); this will put the bowel ends on the stretch and bowels will be laid evenly side by side. (*c*) A trifle more than one-half of the distance from the mesenteric to the opposite border of the gut place forceps 2, as shown in Fig. 2, taking small bite through the contiguous walls of both bowels.

Third Step.—With the bowel ends still gently stretched and lying evenly side by side, place forceps 3 and 4 on the cut edges of the outer bowel walls, each exactly the same distance from the mesentery as forceps 2 (Fig. 3). Remove the hemostatic forceps. (The four forceps are now in the positions of the four Connell tension sutures and are to be used simply for holding the gut to facilitate sewing.)

Fourth Step.—(*a*) Have an assistant hold forceps 1 in his right and forceps 2 in his left hand, pulling gently in opposite directions; drop forceps 3 and 4 (Fig. 4). (*b*) Proceed to suture that portion of the bowel ends between forceps 1 and 2 with a continuous through-and-through right-angled suture, using a straight round needle. Begin at forceps 2 and suture toward forceps 1. Tie the first completed loop of the right-angled suture and *leave the end long* (Fig. 4); continue the suture to forceps 1, taking care to make a back stitch on every fourth loop to prevent the suture from drawing and puckering the gut; continue the suture a trifle beyond forceps 1, taking care to pass beneath the point where the forceps are fast, and to make a complete back stitch at this point—the mesenteric border is always the point of danger in any suture—as the suturing proceeds keep the thread taut to insure close approximation of serous surfaces.

Fifth Step.—(*a*) Drop forceps 2, or it may be removed at this stage. (*b*) Have the assistant take forceps 1 in his right hand and forceps 3 and 4 close together in his left hand, drawing forceps 1 to the right and forceps 3 and 4 to the left (Fig. 5 shows forceps in transit, the arrows indicate direction of the traction), thus placing the bowels from 1 to 3 and from 1 to 4 together (Fig. 6). (*c*) Continue the suturing along from forceps 1 toward forceps 3 and 4 and a trifle beyond and beneath forceps 3 and 4 (Fig. 6).

All forceps are now to be removed and the bowel straightened out. Over two-thirds of the suturing will be completed at this stage and the remaining opening is to be closed by the through-and-through suture, applied in such a way as to completely invert the cut edges. The end of the suture which was tied and left long may be used as a tractor for one side. As the

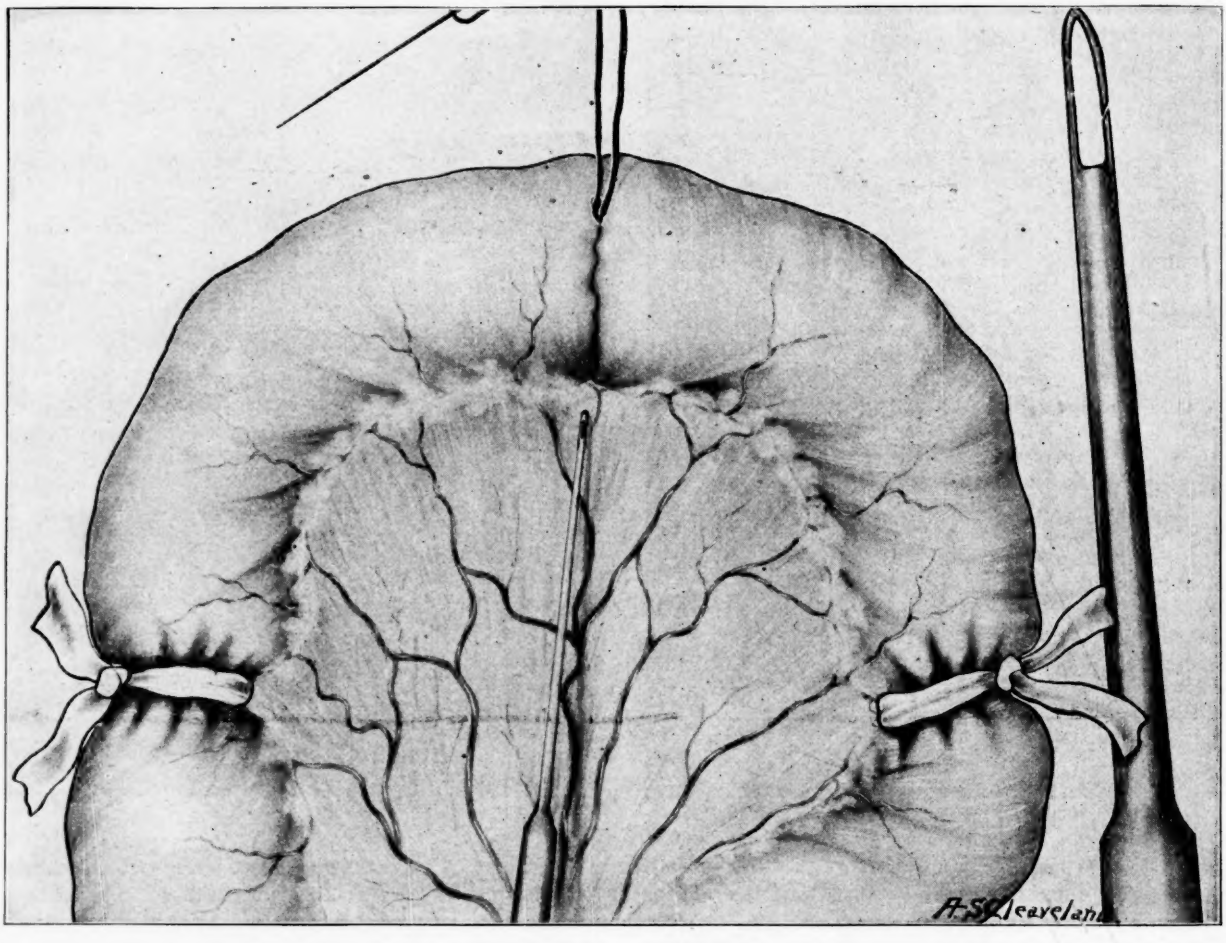

Fig. 8.—Note the spring eye in ligature carrier.

suturing proceeds keep the thread pulled fairly taut as before, thus keeping the sutured bowels snugly together and at the same time providing a tractor for holding the gut in position.

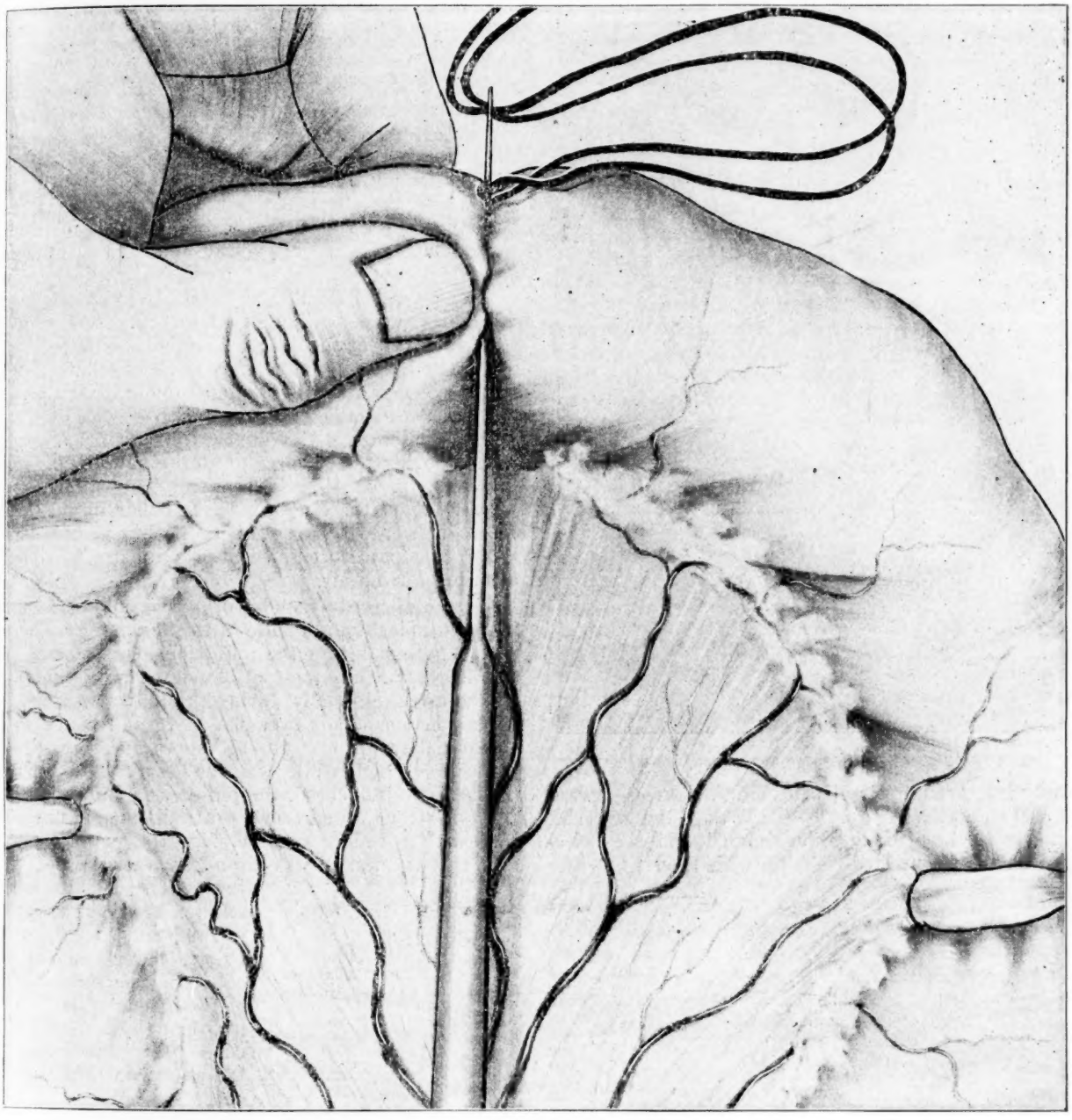

Figure 9.

Sixth Step.—Suture the remaining opening by applying the continuous right-angled through-and-through suture on exactly the same principle as if the bowels were laid side by side (Fig. 7). During the first step, when the bowels are held side by side, it should be noted that the needle passes from *within* bowel A outward, thence from without bowel B inward, then from within bowel B outward, and from *without* bowel A inward, thence from *within* bowel A outward, and so on, so that the *loop* is always on the inside of the gut. Carry out this method, inverting the cut edges until the opening is all closed, when the beginning and end of the continuous suture will be together; leave the *free end longer* than the tied end so that they can be readily identified.

Care must be taken during this last stage, as in every other case of through-and-through suturing when the bowel edges are not held firmly, that the suture penetrates all coats of the gut. When the bowel has been divided there is always an eversion of the mucosa with retraction of the serous and muscular coats—this must not mislead the operator into taking a bite through the mucosa only.

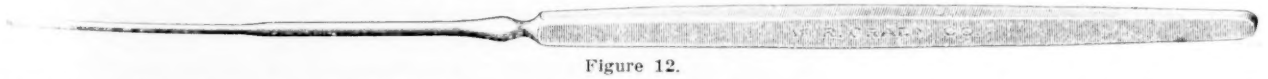

Figure 12.

Nothing remains now but to tie the knot so that it shall lie on the inside of the gut.

Seventh Step.—Carefully insert the ligature carrier between the sutured edges from one-half to three-fourths

of an inch away from the point where the long suture ends emerge (Fig. 8); bring the carrier out exactly in the small opening between the long suture ends, thread both suture ends in the carrier and withdraw the instrument from the bowel (Fig. 9); pull the suture ends

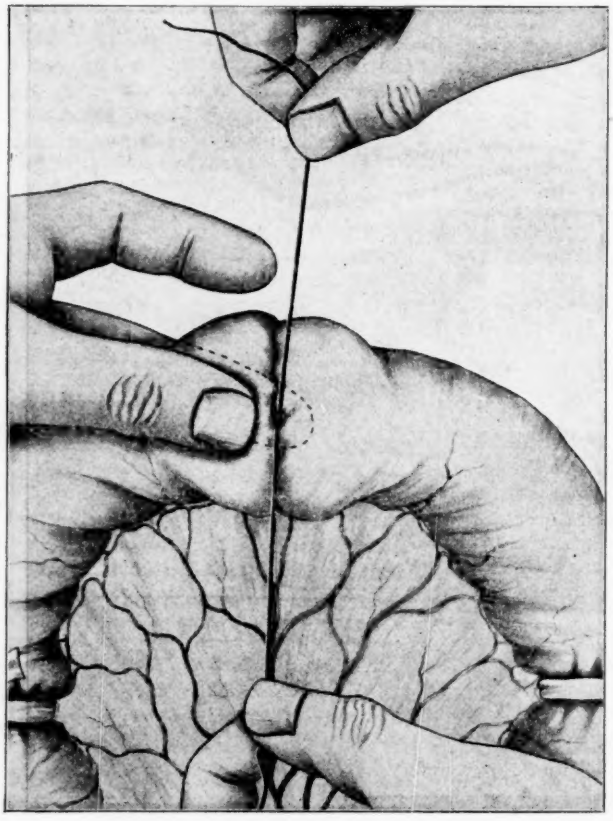

Figure 10.

entirely out through the place where the carrier entered and pull gently on the *long end only* until the two sides of the bowel are closely approximated and the bowel ends are entirely inverted. Tie the ends tightly together

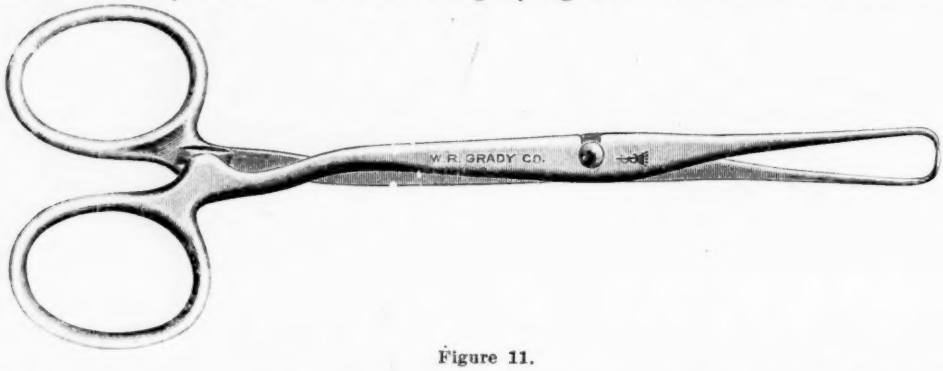

Figure 11.

with a surgeon's knot and cut ends short (Fig. 10). Roll the bowel gently between the fingers, the knot will slip through between the sutured edges and the bowel will regain its normal contour.

103 State Street.

Political Honors for Medical Men in Switzerland.—As THE JOURNAL has previously stated, the president of the Swiss republic is a physician. He is now serving his third term. He was elected to the National Council in 1867, and has served as legislator or member of the cabinet since. His salary as president is less than $4,000. The representative of Switzerland in France is also a physician, Dr. Lardy.

THE IMPROVEMENT OF GENERAL ANESTHESIA ON THE BASIS OF SCHLEICH'S PRINCIPLES:

WITH SPECIAL REFERENCE TO ANESTHOL.

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NEW YORK CITY.

(Concluded from p. 556.)

ADMINISTRATION.

It is not my intention to give you any statistic data concerning the effect of anesthol in the various cases. Working as I do at a number of hospitals, with their continuously rotating house staff and consequent change of narcotizers every few months, such statistics would be of little value. I should, however, like to narrate briefly what experience has taught us in connection with the administration of the drug. Anesthol should be administered by the drop method, the same as all other drugs used for general anesthesia, first rapidly, later slowly.

After considerable experimentation we now drop it on an Esmarch mask with a double frame, which is covered with a doubly-folded piece of sterile gauze and a piece of oiled silk or Mosetig batiste. The latter has an opening about the size of a silver dollar in the center. It is true some of the anesthetic is thus wasted, but in return the patient besides always inhales a sufficient amount of fresh air.

If administered drop by drop the subject is easily brought under the influence of the anesthetic. There is no struggling during the induction of anesthesia. If, on the other hand, anesthol be poured indiscriminately on the mask, especially during the induction stage, the patient may suddenly turn pale and respiration may become shallow or even to all appearances cease altogether for a little while; yet, the heart will be found to be but little influenced, the pulse continuing to remain full and strong, in agreeable contradistinction to chloroform with its sudden syncope. My experience has always been that if anesthol was given in too large doses by an inexperienced narcotizer it affected the respiratory center and not the circulatory. I have never had the narcotizer tell me, in the course of these four years: "Doctor, the pulse is weak," if by chance the anesthesia was not as satisfactory as desirable. The remark made in such an event was invariably: "Doctor, the patient does not breathe well." A short, rhythmic pressure on the abdomen or artificial respiration with the mask entirely removed would, in these instances, soon restore normal conditions.

I would, however, here especially emphasize the fact, that such accidents can be entirely avoided if the narcoses be carefully conducted. On the other hand, shallow breathing should not be mistaken for inhibition of breathing. So long as the patient's pupils were contracted and his lips red I did not share the alarm of the young narcotizer and have never considered artificial respiration called for. An inexperienced narcotizer may think that his patient has stopped breathing, when

respiration has merely become shallow. Removal of the mask, thus allowing the patient to breathe pure air for a few moments, will soon restore to normal the temporarily apparently alarming condition. Of course, if anesthol were continuously poured on the mask I am sure the narcotizer would succeed in killing his patient, even with this, I think, the safest of all anesthetics.

As soon as the second stage of general anesthesia has been reached, one or two drops every 2 or 3 seconds suffice in the hands of an experienced and efficient anesthetist to properly keep the patient under the influence of the drug. The administration by drops must be regularly continued throughout the narcosis.

DEEP ANESTHESIA IS NOT CAUSED.

In view of the fact that, according to Schleich's reasoning, the body stores very little of an anesthetic the B. P. of which corresponds, or nearly corresponds to its own temperature, since the patient exhales almost as much of the drug with each expiration as has been previously introduced into the blood on inspiration, anesthesia is thus merely kept going. The patient is kept just sufficiently under the influence of the anesthetic to enable the operator to conveniently do his work. The patient never is any more deeply narcotized than is necessary for the surgeon to perform his operation. In consequence of this almost complete equilibrium that is maintained between addition and loss, it sometimes took us some time, in the beginning of our clinical research, to reach the second stage of anesthesia. It also frequently happened that the patient never completely lost the reflexes, especially in abdominal operations, no matter how profoundly he seemed to be narcotized. As soon as, for instance, traction was made on the stomach or on the omentum, say in the case of gastro-enterostomy, the patient would resist.

THE ADDITION OF MORPHIN.

On the strength of this clinical experience we introduced the administration of a hypodermic of 1/12, 1/8 to 1/4 of a grain of morphin, according to age, without atropia, one-half to three-quarters of an hour before beginning anesthesia in all abdominal cases. This procedure worked like a charm, so much so that a few months later, in the fall of 1899, we made this hypodermic administration of morphin prior to anesthesia a standing rule in every case, no matter what the nature of the operation.[15] This wrought immense improvement. Induction of anesthesia was more speedily accomplished and the second stage quiet; much less of the drug was required. If the reflexes were still pronounced in spite of the previous hypodermic injection, an additional dose of morphin of proportionate amount was injected during the operation. This had the desired effect, even in alcoholics, who by this means respond favorably to anesthol administration.

Still, in combination with morphin, anesthol must be continuously administered, drop by drop, during the entire course of the operation. If this be not done some patients will begin to retch or to vomit, just as we are accustomed to see it after the use of other anesthetics, particularly chloroform. If, in such an event, the amount of anesthol administered be gradually increased the vomiting during the operation promptly ceases. This phenomenon has been observed in every instance.

With the continuous drop method and a previous hypodermic of morphin not much of the drug is required, and the patient may be kept under its influence for hours with a comparatively small amount. Salivation and mucous râles never occur. There is no cyanosis. The patients appear to be in a deep natural sleep. Awakening is usually quick, just as was observed with Schleich's mixtures. The patients regain their mental faculties in an astonishingly brief space of time; they often awake while still on the operating table and intelligently respond to questions. Since receiving a preliminary morphin injection they now first sleep for a while after they come out of the anesthesia, but can be easily aroused.

SEQUELÆ.

As to sequelæ: vomiting is varying. I have had many patients who did not throw up a single time; others, again, vomit just as often as frequently happens after chloroform or ether narcosis. On the whole I think, however, that vomiting after anesthol is rare, and at no time as persistent, compared to the frequency of its occurrence after the administration of other anesthetics. Headache, general malaise and general systemic affections, so often witnessed after chloroform or ether anesthesia, are very rarely met. Not in a single case have I seen bronchitis or pneumonia as a result of anesthol narcosis. In a very few instances the symptoms of a previously existing nephritis were temporarily slightly increased. Heart, lung and kidney affections were never considered a contraindication to the use of anesthol. Of course, wherever local cocain infiltration or spinal anesthesia seemed indicated it was always employed.

DEATHS UNDER ANESTHOL.

In a series of many hundreds of cases operated on within the last four years there have been two deaths during the anesthesia, and these occurred at the end of the operation. Both were operations on hospital patients on the kidney. One was in a man with a large horseshoe kidney and total suppression of urine for six days in consequence of impacted ureteral stones. The operation was rather prolonged, resection of the eleventh and twelfth ribs being necessary in order to bring a very large hyperemic and edematous organ outside of the wound. The obstructed ureter was cleared first, after high ureterotomy; but a number of faceted stones in the calices of the kidney could not be extracted, though the wound had been lengthened into the pelvis. Therefore, section cut of the kidney was made. The assistant compressed the renal artery well, but failed with regard to the vein. A gush of venous blood was followed by sudden absolute anemia of the divided kidney surfaces. The face of the patient likewise turned pale and the pupils became dilated. All our efforts to restore the action of lungs and heart proved futile. The patient had died. Autopsy was refused. Death seemed to me due either to sudden aspiration of air through one of the very large branches of the renal vein or to true shock. The administration of anesthol had been stopped fully ten minutes before this accident.

The other death occurred during a nephrectomy performed on a much emaciated young woman with an advanced tuberculosis of the uropoietic system. When ligating the pedicle of the kidney the patient showed signs of awakening and became restless; deeper anesthesia was ordered. Suddenly respiration and pulse ceased. All our efforts at resuscitation were in vain. Here, too, autopsy was refused. It is possible that the sudden administration of a larger quantity of the anesthetic towards the end of a difficult operation proved too much for the patient's general condition, and suddenly

[15] It is highly interesting to me to read in the report of the proceedings of the Congress of German Surgeons, in 1901, that Mayer advocates the administration of a hypodermic of morphin previous to inhalation narcosis.

increased the shock to a point where medical help was powerless. I feel confident, however, that the result would have been the same with any other kind of anesthetic.

OBSERVATIONS OF DR. GUTH.

Dr. William C. Guth of New York, who has conducted the anesthesia in the greater number of my private patients outside of the hospitals for the last eleven years, and hence has had most favorable opportunities to carefully note the varying effects of the respective anesthetics used from the very beginning to date, states his opinion regarding anesthol as follows:

Since Oct. 15, 1898, I have administered anesthol in your private practice as a general anesthetic in 200 cases, and at your suggestion I took extensive notes and kept a detailed record of all these cases, noting particularly the amount of anesthol administered to induce anesthesia, the total amount of the anesthetic employed in each case, the behavior of the patient from the time of the administration of the anesthetic to return to consciousness; also noted, as far as practicable, the respiratory, cardiac and renal conditions prior to, during and following such narcosis. In addition I have made such observations and entries in the record as were suggested and outlined by you.

Having had, therefore, during this period (3½ years) the opportunity of carefully noting the effects of anesthol, we are warranted in drawing conclusions as to its place and value among anesthetics and comparing its action and its advantages, if it possess any, with chloroform, ether or combinations of chloroform and ether.

I have observed that anesthol, when administered by the "drop-by-drop" method (employing an Esmarch or Schimmelbusch mask, covered with sterilized gauze and oiled silk with central opening) surgical anesthesia is established in the majority of cases in about 8 minutes. In those instances in which morphin (without atropin) was administered hypodermically about three-quarters of an hour previous to the introduction of anesthesia, the primary stage of anesthesia very frequently was established in a few minutes less time. We have noted, too, and we may stamp it as one of the agreeable and distinctive features of anesthol anesthesia when so conducted (i. e., preceded by morphin hypodermically) that the stage of excitement is practically eliminated from the primary stage of anesthesia; also, that in the transition from this stage to that of the complete surgical degree the patients in every instance enter into the latter stage gradually, never suddenly or with the next inspiratory effort, as is frequently observed in chloroform administration. Neither have we noted in this transition stage any sudden fall in pulse rate, the change to the slower, fuller pulse coming on gradually. Complete anesthesia having been gradually induced, the pulse is full, slow, regular (of the chloroform anesthesia type) and the respirations regular, full and not stertorous.

In no instance has there been an increase in salivation or bronchial mucus during narcosis. The face presents a healthy color, there is no pallor, and if the anesthesia be administered on the mask described, by the "drop-by-drop" method, cyanosis never occurs. Of course, if the anesthetic be administered carelessly or poured on the mask in an indiscriminate and indifferent manner, the danger of inviting serious and possibly disastrous results from overdose threatens. To accomplish an approach to an ideal narcosis for the surgeon's purpose and that with the least risk of subjecting the patient to undue anesthetic shock, anesthol must be administered with the same care and judgment necessary in conducting any general anesthesia.

As I have stated, to obtain the most satisfactory anesthesia, anesthol should be administered "drop by drop." This term, familiar to all anesthetists, may call for elucidation as applied to anesthol anesthesia. On consulting my records you will note that on an average 8 to 10 grams of anesthol were employed in about as many minutes to induce primary anesthesia and that throughout the administration of this agent, the drop-by-drop method was continued at about the same rate, so that, in a general way, we may say, for an operation of the major type, when complete muscular relaxation is to be maintained throughout, 60 grams of anesthol will be consumed in the course of an hour, or about one gram a minute, if administered drop by drop.

When given in the manner described, we have found in almost every instance, even in cases of prolonged anesthesia, that consciousness returns in a very few minutes after the withdrawal of the mask and frequently we have noted that the patient became fully awake and responded promptly and intelligently to questions, while still on the operating table during the application of outer surgical dressing.

Vomiting occurs in a small percentage of cases after return to consciousness; it is not of a prolonged or distressing type as far as I have been able to elicit. As with chloroform, if the patient be insufficiently under the influence of the anesthetic, retching or vomiting will occur during the administration. This condition is remedied by persisting in the administration of the anesthetic and not by pushing or crowding it.

Among cases recorded, you will note that several had chronic bronchitis or nephritis before operation, in all of which anesthol was administered with the happiest anesthetic result. There have been instances, too, of serious valvular cardiac lesion, atheromatous cases, diabetes, profound anemia and anemia with severe surgical shock, in which the anesthesia was most satisfactory and in which, contrary to what might have been expected in such instances, a better circulatory and respiratory condition was induced during the anesthetization. In but one instance, that of operative intervention for surgical kidney, I have noticed embarrassed respiration with cyanosis. This condition probably was due to the position of the patient on the table at the time of operation, for, on changing the position, these manifestations ceased and normal respiration and healthy color returned.

Résumé.—It will be found that in a patient under the influence of anesthol, respiration is slow, quiet, full; there is no excessive secretion of saliva or of bronchial mucus; the face is not flushed, neither is it pale; its color may be described as normal; the pupil is contracted as in chloroform narcosis; the pulse is slow, full and regular. Complete muscular relaxation is established and maintained. Anesthol combines the good effects of chloroform and ether and has its advantages over both as will be seen from the following: In no instance have we noticed any sudden or alarming changes in pulse rate, volume or pressure. In every instance the patient was brought to the stage of complete anesthesia gradually and progressively. Thus has been eliminated that source of concern of the anesthetist as is frequently met in chloroform narcosis, that, even when that anesthetic has been most skilfully administered, the patient at one moment appears to be but superficially narcotized while with the next inspiration or two a most profound anesthesia ensues with disturbed pulse rate and pallor. Pulmonary and renal complications have not in any case followed the administration of anesthol, and where they have existed prior to the use of it, they have not been aggravated. The return to consciousness is prompt; in fact, frequently strikingly so. The tendency throughout the narcosis is toward recovery from the anesthetic effect, not to an approach toward deeper and profounder anesthesia, hence the advisability of administering it constantly, at a suitable rate and drop by drop. We have observed no instance, even after its prolonged administration, in which the patient had to contend (in addition to reaction from surgical interference) with anesthetic shock.

CONCLUSIONS.

Summing up I would say: Believing Schleich's principle of improving general anesthesia on a physical rather than chemical basis to be correct, I consider anesthol—produced as it is in true conformity with this principle—to be the least dangerous of all anesthetics thus far known, as they are employed for regular narcosis in the daily work of the surgeon. I therefore be-

lieve it worthy of the most careful consideration of every physician employing anesthetics.

No doubt M.S. possesses great advantages over pure chloroform or sulphuric ether and is an excellent anesthetic, but in the light of the presumed correctness of Schleich's reasoning, outlined above, M.S. or any other combination of anesthetic drugs, the boiling point of which does not correspond to the temperature of the human body, can not be considered as safe as anesthol.

The improvement in general anesthesia brought about within the last few years has been manifold. Primary administration of nitrous oxid, followed by ether oxygen anesthesia, carried out by expert anesthetists such as New York may well be proud of, means a great step forward in the right direction. The same is true in regard to the efforts on the part of the various staffs of attending physicians and surgeons of our large hospitals, to create a paid position for permanent narcotizers. No doubt the future will see such experts in place in every well-conducted hospital, and thus put a stop to the jeopardizing of the lives of our patients by the inveterate method of having the youngest doctor, fresh from college, untrained and inexperienced as he is, attend to narcoses.

However, in private practice and in places remote from the larger cities, such expert anesthetizers can not always be at our disposal. The country doctor must carry the anesthetic in his valise; he can not regularly employ a second man, who carries with him the cylinders filled with nitrous oxid, nor can he himself bring along the large though ingenious and useful rubber bags, enabling the doctor to administer ether in a better and more scientific way than is possible with the paper and towel cone.

Here simpler appliances with regard to mask as well as the anesthetic are needed. Ether and chloroform administered with the help of uncomplicated masks or cones have carried the field so far. Anesthol, as has been demonstrated above, being a true solution, not a mixture, may thus well be employed in these cases in place of the former certainly more injurious pure drugs.

I should be pleased, indeed, if these lines should induce others to try anesthol, and they should get from their patients so gratifying a description of their subjective impression as I recently received from a colleague, on whom I operated at his home three times in close succession for a rapidly spreading phlegmon of hand and arm resulting from a finger infection. In each instance the anesthesia was conducted with anesthol preceded by a hypodermic of ¼ of morphin. His words to me after this threefold experience were these:

"You take it (anesthol) without knowing what you are taking, and when you awake you do not know what you have taken. It does not annoy you; it does not make you sick. It is simply a question of falling asleep and waking up."

The Need of Organization.—Dr. James C. Johnston, in the *Philadelphia Medical Journal*, says: "The worst of the many evils with which the medical profession has to contend is one of which all our national experience has taught us the folly, decentralization. It is evident throughout. Its business is worse handled than any other. Instead of trusts, in which overproduction is restrained, in which wages can be fixed and maintained, and in which the incompetent and superfluous are eliminated, it is every man for himself and the devil and his colleagues for the hindmost. This is true of its material for investigation and of the journals it supports, as well as actual practice."

FEVERS OF DOUBTFUL NATURE IN INFANCY.

PRELIMINARY CLINICAL NOTE.

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HAVANA, CUBA.

In the island of Cuba the febrile process is found with extraordinary frequency during infancy and childhood. The meaning of the fever symptom in a tropical country where typhoid fever, malaria, influenza and yellow fever exist in all their forms and varieties has always been a matter of great local interest which has given rise to lively discussions. Not over 20 years ago the diagnosis of febrile diseases was made by the methods of the old clinic, and the anatomic denominations were the ones which prevailed in the nosologic charts.

ALL FEVERS CONSIDERED MALARIAL.

At the time that little was believed in the existence of typhoid fever in this island, and when it was supposed that yellow fever only attacked unacclimated foreigners, the tendency of physicians was to diagnose as malaria all cases where a local cause to the process could not be easily found, or where it could not be referred to another well-defined general disease.

During the decade of 1880 to 1890 the existence of typhoid fever in our towns of importance was well demonstrated pathologically; but notwithstanding many persisted in denying it, continuing to classify as malaria all cases of remittent fever of longer or shorter duration. A true epidemic of malaria-mania spread itself among the physicians to such an extent that seldom a febrile process was not attributed to malaria, even when there were evident signs to explain its origin in a different way. At about that time works were published in other countries intended to exhibit the different forms and localizations of this infection of the blood.

In 1890 I presented to the First Cuban Medical Congress a paper on the use of quinin in Havana, where I tried to refute the tendency to abuse of that alkaloid, particularly in children, and I firmly denied the existence of so many cases of malaria, either as a primary disease or as a secondary process, always supposed to be associated to many other pathologic processes. A very small number of physicians supported my idea at that time.

THE VARIOUS OTHER CAUSES OF FEVER.

In a lecture which I delivered two years later to the "Sociedad de Estudios Clinicos," I initiated a discussion on the several kinds of fever reigning in this city, especially during the hot season, and which attacked children with preference, being then inclined to admit for many of them an infectious cause of intestinal origin. I tried to differentiate them from typhoid fever by their etiology, their symptoms and their course, making saprophytism and endogenic or exogenic autointoxication responsible for some of our types of tropical fevers. I called attention to the cases of typhoid fever in which autopsy did not show the characteristic lesions of Peyer's patches and only the isolated follicles of the large intestine were involved, for which reason these cases were denominated colo-typhus by the ancient writers. I pointed out besides the coincidence of infectious enteritis in infancy during the epidemic of those fevers in children of all ages and young adults, considering colo-infection, as the physicians of Lyon's school did, as an attenuated expression of Eberth-infection.

In 1893, and as a consequence of a dedication to the study of children's diseases, I presented to the First

Pan-American Medical Congress, held at Washington, a paper on "Primary Acute Entero-colitis in Infancy," in which I described the different varieties of types of gastrointestinal troubles in the first years of life, and I called attention to the frequency and predominance among us of the eclamptic, cerebral, gastric and typhoid forms of the ancients in opposition to the cholera infantum which was common in the United States and certain regions of Europe. In that work I demonstrated with facts taken from my personal experience that in that division of pediatrics I had not observed anything in Havana which had not been minutely described in other countries by the old masters of that branch of medicine.

THE INFREQUENCE OF MALARIA.

In the course of recent years it has been proved beyond doubt by means of the observation of the blood that malaria is not frequent in Havana, as I affirmed in 1890, based on the clinical and epidemiologic observation. It has also been proved that the anopheles species of mosquito is seldom found within the radius of the city, being somewhat frequent in the suburbs and much more in the country where cases of acute and chronic malaria are common.

The results of modern scientific investigations have thus brought about a change in the ideas regarding the nature of our fevers. To-day it is accepted in a general way that malaria is not so frequent in Havana; that typhoid fever exists in greater proportion and that, on the other hand, there is a large number of febrile patients in which neither malaria nor typhoid fever can be diagnosed, not only on account of the clinical signs, but also by the constant negative results of the hematologic analysis, as far as Laveran's parasites and agglutination tests are concerned.

The fact that the Island of Cuba is one of the main foci of yellow fever introduces a new element of discussion in the etiology and diagnosis of infantile fevers, inasmuch as clinical and epidemiologic demonstrations have clearly shown the receptivity of the natives, denied for such a long time, for that dreadful disease.

THE DIAGNOSIS COMPLICATED.

I have thought it necessary to make this historical sketch in order to show how divided the opinion of physicians about the nature of our tropical fevers has always been; also to point out the difficulties surrounding the diagnosis of infantile pyrexias in a country where malaria, typhoid fever, influenza and yellow fever exist in their usual forms of epidemic exacerbations, and, where it is necessary to admit at the same time the existence of fevers as yet undeterminated, and which have their origin in the digestive tube and which the developing modern science accepts in all other countries since the intestinal autointoxication doctrine was established to explain the origin of general and organic troubles similar to those produced by other better known specific infections.

THE GASTROINTESTINAL FEVER.

The group of fevers which I intend to describe here constitute two principal types, one of rapid, the other of slow evolution. Both are common to all periods of infancy and childhood, but the younger the child the more frequently the rapid evolutive forms occur. The first type is characterized by feverish accesses most commonly of a depressive rather than of an excitative nature. The disease in many cases attacks the child unawares when he is in excellent state of health; but it is frequently preceded by digestive derangements, diarrhea and simple indigestion, the gastrointestinal symptoms being always more or less apparent. At first vomiting and constipation may exist or yellowish, greenish, thick mucous stools accompanied by redness and irritation of the anus. The tongue is slightly coated and if the child is traversing the dental period stomatitis and throat inflammation may exist to a certain degree. In some cases the symptoms mentioned do not exist, the only phenomena apparent being certain sensibility experienced on pressure of the abdomen, somewhat intensified on the region of the liver and accompanied by muscular contractions.

From the first stage the temperature rises to 104 or more. During the first day of the disease the thermic cycle is sustained or continuous, or interrupted by slight descents followed by new rises. During the succeeding days the temperature follows a different course dependent on the evolutions taking place in the morbid process of the disease, whether in the direction of recovery or death. In the first case the fever assumes a remittent character and in a few days completely disappears together with all other symptoms which gradually disappear at the same time. When the process of the disease must certainly end in death the temperature has a marked tendency to continuity, the cerebral symptoms grow more intensified, convulsive phenomena appear accompanied by coldness of the extremities and suppression of the urine. The little patient may die in the course of 24, 36 or 48 hours.

The causes which in Cuba have always originated discussions on the nature of these cases are:

1. The belief in the prevalence of endemic paludic germs.

2. The possibility existing at present that they may constitute syderant types of yellow fever.

3. The absence of phenomena in the digestive apparatus frequently observed in the early period of invasion of the disease.

In other countries the differential diagnosis of these cases is made on malarial infections, typhoid infections, acute cases of influenza, cerebrospinal meningitis, primary tubercular meningitis, or secondary meningitis of rapid evolution; but in all of them the influence of intestinal infection on the origin of these pathologic cases which are so frequent during the first stages of life, is to-day recognized.

Marfan, Saint Philip, Comby, Escherich, Baginsky, in Europe; Booker, Jacobi, Starr, Holt, Crandall, and many others, in America, have described the rapid type of these intestinal infections. Modern doctrines compel us to classify these cases as fevers whose nature is still undergoing due study and investigation, so as to bring them to the rank of definitely specified infections. But they correspond exactly to the severe eclamptic, cerebral, meningitic or convulsive forms of acute enteritis, or enterocolitis which are described by such authors of old text books, as: Bouchut, West, Trousseau, Rilliez and Barthez, Meigs, who pointed them out as a very frequent ocurrence during the first two years of life. The diseases are the same. The only difference to be observed is in the denomination which varies in accordance with modern theories held as to its etiology and pathogenic mechanism.

REASONS FOR THE GASTROINTESTINAL FEVER THEORY.

In the Island of Cuba, and above all, in the City of Havana and other localities where malaria is not so frequent, I can assure, after more than twenty years' experience, that the majority of these cases of acute infec-

tions have in infancy a gastrointestinal origin owing to the following reasons:

1. The etiologic investigation allows us to discover among the antecedents of the case, more or less serious transgressions in the dietary hygiene, on the strict observance of which I have greatly insisted in my work on acute enterocolitis, published in the "Transactions of the first Pan-American Medical Congress" (Vol. II, p. 1343). I will here add that in many instances the mothers absolutely deny said origin, but clinical observation reveals abnormal discharges. In some cases they confess the fault incurred and later the exact causes of the intestinal derangements can be discovered.

2. The epidemiologic investigation shows, on the other hand, that the disease is more frequent during the warm weather and coincides with the development of fever of typhic nature, with the different types and varieties of gastrointestinal accidents, in many children under two years of age, and with the remittent prolonged cases of fever in children above that age. Its frequent repetition observed in the same child and always obeying to the same cause, dissipates all idea of typhoid or yellow fever; diseases which do not attack the same person twice in accordance with the opinion generally established and admitted.

3. The bacteriologic examination demonstrates the existence of great number of *Bacillus coli communis* in virulent condition, as well as of other saprophytes in the potable waters of Havana. Very frequently unboiled water is administered to nursing children.

4. The hematologic examination reveals the absence of plasmodies in the blood obtained from these small patients as well as the absence of the serum reaction of Widal.

5. The treatment by means of quinin though administered hypodermically, is absolutely inefficient. The children inevitably die while taking quinin unless use be previously made of intestinal eliminators. The greater number of cures and the rapidity with which they are affected depend evidently on the energetic administration of calomel, castor oil or other laxatives, the use of antiseptics and intestinal injections, stimulants of nutrition, and rigorous hydric diet.

CLINICAL CHARACTERISTICS.

Very frequently the fever reappears owing to some neglect of the dietetic plan during convalescence and again yields under the same therapeutic treatment. The inadequate, defective or tardy treatment, the lack of compliance with any detail of the medical prescriptions, physical weakness on the part of the child to resist the disease, intensity of the toxemia owing to the retention of toxic substance in the higher portion of the intestinal canal, due to the atony of the muscular coat, hereditary tendencies or renal insufficiency, are all circumstances which contribute to aggravate these cases, originate secondary infections, and occasion the fatal end of the disease.

The second type of these fevers comprises the cases of slow course. The persistence of fever constitutes the ruling feature of this group. Together with the febrile symptoms gastrointestinal troubles are developed as well as troubles of the other organs without there being any constant relation between the former and the latter.

The disease as a whole reproduces the clinical characteristics of an incomplete typhoid fever, and it may last from one to four weeks, there being cases of longer duration.

The thermic cycle varies greatly: the type of subcontinuous fever is very common during the first and second day, followed by remissions which become more and more pronounced in the subsequent days. There may be accesses every two days and periods of abatements lasting one, two or three days followed by a new rise in temperature which generally occurs together with an aggravation of the intestinal symptoms. Therapeutic intervention directed against the gastrointestinal states always modifies the course of those cases. At other times a moderate and rather regular remittent fever is observed which lasts for many days without any more symptoms until suddenly febrile paroxysms present themselves which then become complicated with cerebral phenomena and may be followed by death with all symptoms of toxemia. In other little patients the fever maintains its remittent character for many days and then diminishes gradually in an irregular way.

The digestive disorders accompanying the feverish syndrome may vary from the mildest form to the predominance of gastrointestinal localization of certain intensity. The tongue is red and somewhat desquamated or slightly coated; there is vomiting of mucous matter, fetid breath, anorexia and thirst; the stools have a semifluid consistency of greenish yellow color, grumous and mucoid, very foul at first and occasionally like those of dysentery. The urine is turbid, loaded with uric acid, urates and sometimes mucin or albumin. Usually the stools turn yellow and lose their offensive smell.

The visceral infarctions are frequent; the liver is almost always augmented and its consistency may reach that which is observed in cirrhosis. The spleen may also be enlarged, but this is less frequent. This fact may occur at the onset of the disease. Finally there are cases where both viscera are in normal state from the beginning to the end of the disease.

The exploration of the abdomen shows pain and distension at the level of the transverse colon in the ascending and descending colon, these symptoms disappearing later on more or less intense fever remaining as the only manifestation of the pathologic process.

Not unfrequently cases are observed which act in a normal way, and with tendency to constipation, but oily laxatives determine the expulsion of mucosities and the attenuation or temporary disappearance of fever. This result at other times can not be obtained without a change in the alimentation.

The type of enteritis of typhoid form of the ancient writers is recognized when studying some of these pathologic classifications in children under two years of age. In other children the morbid process has the type of the gastrointestinal troubles of the ancient writers, or that of gastric fever, which traditional observation separated from the similar form of typhoid fever and malaria.

The diagnostic study of every fever is one of the most difficult ones that may present themselves in pediatric practice. Before the birth of bacteriology the clinical and epidemiologic criterion served as a base to distinguish general diseases among themselves. Often the diagnosis was left uncertain when it could not be confirmed by means of pathologic anatomy. Bacteriologic discoveries have afterward solved many etiologic problems; but doubtless the negative result and the insufficiency of our knowledge in that respect have contributed to a certain extent to throw more confusion on the etiologic conception of some morbid processes. Besides, modern procedures of investigation and experimental demonstrations have revealed that side by side with the better known specific infections there are others which are not

classified as yet. This has given rise since the notable work of Bouchard, to the doctrine of intestinal auto-infections, by which it is tried to explain at present the nature of certain obscure, incomplete or atypical processes which according to the epidemiologic criterion were systematically included in either of the two great pyrexias, typhoid and malaria, and also in yellow fever in countries like ours. In order, therefore, to properly solve the diagnostic problem we must be more cautious than ever, trying to resort to every possible source of positive information; clinical observation, first, laboratory work afterward and a minute etiologic investigation comprising the patient and the surroundings.

Having thus excluded malaria, grippe or typhoid as origins, disregarding the other processes, local or general, capable of producing fevers of a similar course in children, it may be admitted that the forms of slow course that have been described are, in the same way as those of rapid course, consequences of putrefactions that take place in the intestinal tube. These putrefactions may be caused either by direct introduction of morbid agents with the food or by the increased virulence of the micro-organism habitually living in the intestine in a saprophytic state, due to faults in the dietary or to other external influences. The effects are the same: increased intestinal fermentation, production of toxic element and consecutive autointoxication after their absorption in the circulatory system. The feverish syndrome represents a functional trouble depending on an infection which takes place on the surface of the mucous membrane without leaving a trace of any kind. At other times the infection causes more or less extensive injuries which may be propagated to other organs of the digestive apparatus and to the remainder of the organism.

This way of thinking agrees with the work carried out in recent times by Hayen, Lesage, Thiercelin, Escherich, Baginsky, Booker and many others on the part acted by divers micro-organism in the production of infantile gastroenteritis.

An inspection of medical literature shows that the same doubts have arisen in all parts of the world about the classification of those feverish types, which differ in many respects from all the other groups of defined specific infections.

Kelsh and Kiener, Ferée and Vincent in Algiers have argued against those morbid states described by Sesary under the name of gastrointestinal fevers. Legrain, more recently, has attributed them to the colon bacillus and he affirms that this agent may give rise to a whole series of cases of remittent fevers which offer a scale of seriousness from the simple mild form to the syderant form resembling yellow fever. Manson studied them among "unclassified tropical fevers." In Italy, Tomaselli, Cantani, Fazio and others discussed them many years ago as a *sui generis* infection. Fedé, of Naples, describes it with the name of "gastrointestinal infection of infancy," and it is very common to find allusions to those diverse types of fevers in the medical literature of the United States.

The expression "entero-septic fever" proposed by Dr. Tomás, of Matanzas, has become very usual in Cuba, and it is certainly preferable, as it has the advantage of expressing the location and nature of the pathologic phenomena without making reference to any specific micro-organism.

In conclusion, the feverish process during the infantile period of life is very frequent in the Island of Cuba. In a great number of times fever owes its existence to the same infectious diseases which have been described by observers of other countries. Ignorance of this fact has been one of the causes which have contributed to mislead medical opinion on the nature of infantile pyrexias. As a rule, these pyrexias have a tendency to reveal a similar clinical expression during early stages of life. In other words, there does not always exist a constant relation between the infectious agent and the clinical phenomena exhibited by the patient. Hence the diagnosis is extremely difficult and requires minute and wide information of a clinical, etiologic, epidemiologic and experimental order to reach with more certainty the scientific truth.

But it can not be denied that most of the infantile fevers come from intestinal infection. These fevers which I have classified in two groups, according to their duration, correspond to the same processes that in the ancient nosologic classifications were called acute enteritis or enterocolitis, and which at present are named by some writers infectious gastroenteritis or infectious enterocolitis; also intestinal fevers or intestinal infections. Endogenic or ectogenic infections of the intestinal tract are the ones which give rise to the feverish types already described; the septicemic or rapid and the enteroseptic or slow, according to the predominance of the symptoms of autointoxication of the organism or whether more or less extensive inflamatory lesions on the mucous membrane of the intestine are produced.

The prognosis in these fevers depends on the virulence of the germs producing them and on the amount of resistence opposed to it by the organism of the child; but to a great extent it is secondary to the opportunity and energy of the treatment employed as well as to the experience acquired on infantile diseases.

A CONTRIBUTION TO THE PATHOLOGIC HISTOLOGY OF SYPHILITIC ETHMOIDITIS.

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BOSTON.

Among the causes of chronic inflammation of the ethmoid bone syphilis has long been considered to play a prominent part. In the cases, however, which usually come under observation the process is well developed, and it is a rare experience to be able to follow the condition from the beginning. The following case is, therefore, of particular interest, especially in view of the fact that a histologic examination of the anterior portion of the middle turbinate was made at an early stage of the disease.

NARRATION OF CASE.

P. J. B., a man 30 years of age, was referred to me by Dr. H. W. Kilburn, Oct. 25, 1899, with reference to a possible source of irritation in the nose, which might cause inflammation in the conjunctiva of the right eye. Examination showed an enlarged right middle turbinate, the nose and throat being otherwise essentially normal in appearance. The patient's previous history was negative.

The anterior end of the right middle turbinate was snared, and found to exhibit cystic enlargement of the bone. November 1, a portion of the stump remaining was removed with the conchotome. November 16, examination of the right middle turbinate showed an irregular swelling at the margin of the stump which had the appearance of granulation tissue, and which was of such size as to occupy almost the same region as the original anterior extremity. This was removed by the snare. November 21, the granulation tissue had reappeared, and by December 5 had exceeded even the original size of the turbinate. The patient was then put on protoiodid of mercury, one quarter grain, t.i.d. December 19, examination showed the growth to have become smaller, and

exhibiting a cleaner, smoother surface. January 1, iodid of potassium was added to the mercury. The growth continued to diminish in size, and by May 2 was no longer visible. May 22, there was an ozenic odor from the nose, and a portion of dead bone from the region of the right ethmoid was removed. June 19, the region of the right ethmoid showed much irregular retraction and distortion, but there was no odor or discharge. The patient was continued for the next few months on small doses of iodid of sodium. October 1, there was again a polypoid swelling of the right middle turbinate, with purulent discharge, together with a bad odor. Mercury was again administered, in combination with the iodid, and was followed by a disappearance of the polypoid swelling and of the odor. The patient has since that time taken 10 grains of iodid of potassium or sodium, 3 times a day, together with mercury at intervals. There has been no return of the polypoid swelling of the right middle turbinate, and he has been otherwise in excellent health.

Histologic Examination.—The specimen removed Oct. 25, 1899, of the right middle turbinate showed a hemispherical wall of bone, lined on its interior with mucous membrane, and covered externally by swollen erectile tissue and mucous membrane, differing macroscopically in no essential particular from the appearances found in ordinary cystic degeneration of the middle turbinate. The specimen was hardened in Zenker's fluid, and imbedded in paraffin.

Specimens stained with alkaline methylene blue and eosin show, under a low power, the epithelium of the interior and external aspects to consist of flattened pavement cells. In places, the epithelium exhibits an invagination, the walls of which are lined with columnar cells. The epithelial cells are everywhere penetrated with polynuclear leucocytes, particularly in the regions of the invaginations. Below the epithelium there is seen to be a marked proliferation of the connective tissue cells, and of the endothelial cells of the blood vessels. The region immediately below the epithelium contains large numbers of polynuclear leucocytes, which extend downward, though in diminishing numbers, to a point about midway between the epithelium and the periosteum. These are accompanied by lymphoid cells, plasma cells, and a small number of Mastzellen. The mucous glands present no characteristic changes, and no abnormal infiltration of cells in the vicinity. In the submucous region, the most striking changes are seen in the connective tissue. This exhibits a marked proliferation, increasing in intensity, as one advances in the direction of the periosteum. Sections stained with Mallory's triple connective tissue stain show characteristic blue connective tissue fibers to begin a short distance below the mucous membrane, and to increase in density and abundance rapidly. The deeper mucous glands are surrounded on their inferior surface by connective tissue of considerable density. The blood vessels in the regions of the most marked connective tissue proliferation show a thickening of their intima, resulting in a narrowing of their lumen, and giving the characteristic picture of obliterative endarteritis. The periosteum presents a marked proliferation as shown by the closely-packed osteoblasts, and covers irregular prolongations and digitations of the bone. This is chiefly marked on the distal surface of the bone, which in cross section has the appearance of being broken up into numerous irregular islands. The proximal aspect of some of these islands of bone shows but little alteration from the normal, although others are completely surrounded by numerous osteoblasts. Here and there, particularly on the proximal aspect of these islands of bone, osteoclasts are seen, although apparently not more numerous than in middle turbinates of essentially normal character.

In reviewing the description of these appearances we see that the tissue changes consist essentially in a proliferative periostitis, with a new formation of bone in the form of irregular excrescences, in association with a proliferation of the connective tissue in the vicinity and of the endothelial cells of the arteries, leaving in places an obstruction of their lumen. These changes partake of the character of a granulation tumor rather than of a gumma, and are to be referred to the class of syphilitic new-growths termed syphiloma.

DIFFERENTIAL DIAGNOSIS.

The differential diagnosis in this case could hardly have been made clinically, previous to the rapid recurrence of the granulation tissue, after each operation. Even then it is not very uncommon, in the writer's experience, for recurrence of granulation tissue to take place after operation, in cases of ethmoiditis, due to influenza. In the case under consideration the prompt effect of anti-syphilitic remedies established the diagnosis beyond question. From the histologic standpoint it is probable that a diagnosis of syphilis could be made with a reasonable degree of certainty. In cases of ethmoiditis following influenza, and in those cases of polypoid enlargement of the middle turbinate, of unknown, but at least of non-syphilitic etiology, we find, to be sure, a proliferation of the periosteum, with a new formation of bone, but by no means such marked changes in the connective tissue or in the arteries.

It is to be hoped that in cases of ethmoiditis of a similar nature investigators will not only bear in mind the possibility of syphilis, from a clinical and therapeutic point of view, but will subject the excised tissue to careful microscopic examination.

Quackery Quarantine.—The citizen has as much need of quarantine against ignorance and quackery in medical practice as he has gained against all forms of contagion.—G. F. Johnston, Pres. Kan. Board of Regis.

Quadruple Pregnancy with Two Ova.—Baudouin describes (*Gaz. Med. de Paris*) a recent delivery at Paris in which one ovum contained three fetuses, two of them forming a sternopagus, all of the female sex, and one of them surviving. After their delivery a second bag of waters ruptured and a stillborn male child followed.

Lectures on the Physician's Relation to the Community.—The students of Harvard Medical School, says the *Boston Medical and Surgical Journal*, have, on their own initiative, arranged for a series of evening lectures to be given by prominent men, not necessarily physicians, on the general topic of the relation of the physician to the community. This action is noteworthy from several points of view. It shows, in the first place, a growing interest among students of medicine in the broader aspects of their professional work and in the responsibilities which it is sure to entail. Such a movement on the part of medical students, popularly supposed already to be overburdened with lectures, could hardly have occurred ten years ago. To those who have watched the development of the last few years, however, it comes as no great surprise. The students are certainly becoming more and more independent in thought, and are standing more in judgment on the work which they are called on to do and on the teachers who direct it. The results have been in every way salutary, both as regards teachers and students. The desire of a large body of students to provide certain lectures for themselves furthermore points toward a definite need, which they are feeling is not supplied them in the regular course. They want, broadly speaking, to learn from men of experience of their future social and ethical relations to the communities in which they may happen to be placed. This is evidence that they receive no such instruction in their ordinary undergraduate work, which, we believe, is the fact. This leads us to speak of a distinct lack in medical education, and that is, the direction of students in their relation to patients and others whom they must later come in contact with in their professional work. No attempt is made to teach the ethics of medicine except by precept and example, a good but not a sufficient method. Students of medicine certainly need instruction in this subject, a fact which the Harvard students have appreciated.

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THE DIPLOMA VS. EXAMINATION.

An esteemed correspondent offers in this issue some criticisms on a recent editorial in these columns on the above subject, and asks for reasons for the position we assume. Reduced to a sentence, our critic objects to examination by state boards, and wants the medical college diploma recognized as the only necessary qualification for the right to practice. In other words, he would have us go back to the old conditions. Arguments against this position have been given over and over again in the past in medical societies, in medico-sociologic discussions and in medical journals. It would seem useless to go over these again, or to point out the incorrectness of the claim that instructors are in a better position to judge of the fitness of a man to practice than a company of individuals "armed with a series of stock questions," when by "instructors" are meant the faculties of medical colleges, the large majority of which exist for purely commercial purposes, and by "a company of individuals" is meant a state examining board.

In the main we agree with our correspondent that it would be easier and, possibly, more "in harmony with the economic and centralizing spirit of the time, for a small number to authoritatively investigate and pass on the educational merits of fifty or one hundred institutions of learning occasionally, than to adopt the task of perpetually investigating the qualifications of thousands of individuals." If this body could be a national one, with full authority in all the states, composed only of thoroughly competent and disinterested men, and absolutely secure against all local, external, and political influences, it might be that the problem would be solved. But how are we to select such a competent body, and who is to give them the right "to authoritatively investigate and pass on" the merits of these institutions? There would still remain the question how to dispose of applicants from institutions not in the recognized list, and how to meet the pressure for such recognition. These, perhaps the most embarrassing problems, would still remain unsolved.

The great obstacle in securing satisfactory legislation comes from the fact that such legislation is a function of the state and not of the national legislature. And here we are reminded that the average state legislature is prone to be decidedly too lenient with its own institutions and, if possible, to favor these as against those outside of the state. Further, no state can rightfully deputize a matter involving the health and welfare of its citizens to an indefinite number of irresponsible bodies such as college faculties, which are outside its limits and in no way subject to its jurisdiction or to that of the national government. A diploma from a few colleges means something, from the majority it means nothing, unless it be that the holder has paid a certain number of dollars into the treasury of the institution that granted it.

No other civilized nation, so far as we know, grants the right to practice on a diploma granted by a private teaching institution, and even Uncle Sam guards his soldiers and sailors, for it is well known that no one can be admitted to the medical corps of the Army, the Navy, or the Public Health and Marine-Hospital Service on the strength of a diploma alone, no matter how high the standard of the college issuing it.

We hardly see that the requirement of a diploma as a prerequisite to examination is a confession of weakness. The diploma is supposed to be an evidence of a certain amount of medical training and clinical instruction and the requirement of this or of some evidence that the applicant has had clinical experience should be insisted on. Many states, however, do not require a diploma, depending entirely on examination. Our correspondent's reference to "A central examining board and its associate committees" is of local import only, as we presume he refers to the pending legislation in Illinois.

We recognize as a fact that but few of our state examining and licensing boards are constituted as they should be; that written and oral examinations by means of questions and answers, and without practical clinical demonstrations are decidedly unsatisfactory, and that for an already licensed physician to have to pass an examination when he chooses to move to another part of his own country, if this should happen to be another state, is worse than outrageous. But, in spite of all this, we can not think of going back and of giving to commercially controlled medical colleges the right to say how much or how little a man or woman must know before entering on the responsible duties of a practicing physician.

The question of medical education and with it that of protecting the public from incompetent practitioners, charlatans and impostors, is one for our profession to solve and, as stated above, the question is seriously involved from the fact that we have to recognize fifty different legislating bodies. For years we have been improving, the standard has been gradually raised, and we can not afford to go back now. We must, however, recognize the necessity for meeting the present unsatisfactory conditions, especially that of granting a man the right to practice all over his own country if he has the right to practice in any part of it.

CHLOROMA, OR GREEN TUMORS.

There are few parts of the human body that have received more attention from investigators and clinicians during recent years than the lymphoid structures —spleen, lymph glands and bone marrow. The numerous contributions relating to splenic anemia indicate a growing interest in the disease as well as a general spread of a knowledge of its clinical and anatomic characteristics. A commendable, critical spirit has arisen with regard to Hodgkin's disease, and cases are repeatedly submitted to laborious inquiry to determine their tuberculous or non-tuberculous nature. The researches by Warthin and others on the hemolymph glands, the study of the hematopoietic structures in acute infections, and the increasing importance of these organs in the production of immunity have greatly advanced the work in this field. In this field of diseases of the blood-forming organs there is much to attract the clinician and to stimulate him to careful and complete observations of the many interesting forms of disease that here may meet him.

Although it may be determined at some future time that chloroma is simply a rare form of other and better known processes of disease, the recent accounts of two cases by Rosenblath and Risel,[1] together with their summary of the literature, leave a strong impression that this condition will always command a separate place on account of the clinical features. Notwithstanding that the first report dealing with these grass-green, yellowish or grayish-green tumors was made nearly one hundred years ago, only about 20 cases have been recorded since. In most of the cases double or unilateral exophthalmus is one of the earliest symptoms and naturally has frequently led to the consultation of ophthalmologists. It is caused by development behind the eyeball of tumors which soon become palpable. Exophthalmic goiter has been suspected or diagnosed in a number of cases. Tumors develop elsewhere also, as in both pseudoleukemia and leukemia, but with a marked predilection for the periosteum, especially of the skull bones; occasionally the long bones, sternum or vertebræ are affected. In this feature of chloroma there will be seen a close resemblance to those other rare tumors of bone, the multiple myelomas, which are also allied to leukemia and pseudoleukemia. In many cases of chloroma a hemorrhagic diathesis has been observed, and in a few cases changes have been found in the blood similar to those of acute leukemia.

The disease runs a short course and terminates fatally. In some of the cases a green coloring material appeared in the urine. In the two cases considered by Rosenblath and Risel the so-called Bence-Jones reaction of the urine for albumoses was absent. The peculiar color of the growths is not appreciable unless portions of the more accessible tumors are removed for examination; in some instances operations, such as evisceration of the orbit, have revealed this striking characteristic.

Various theories have been advanced to explain the pigmentation of the newly-formed tissue, but as yet no satisfactory solution of this question has been reached; the theory of metamorphosed pigments from the blood, however, has numerous points in its favor. It is to be regretted that there are no accounts of bacteriologic investigation of the cases reported by Rosenblath and Risel for this aspect of chloroma merits thorough examination. The attention of the profession generally should be directed not only toward the recognition of these cases, but also toward securing complete investigations.

UNDERGROUND TRANSIT AND PUBLIC HEALTH.

The question of transportation in our great cities is one that is agitating public opinion and becoming more or less an issue in local politics. The inconveniences of obsolete systems not progressive *pari passu* with the growth and needs of the cities call more and more for better facilities, especially in view of the modern tendency to concentration of population and expansion of municipalities. The inconvenience, however, of permanent surface railway tracks in the business centers is such that some substitute is constantly being advocated. Surface railroads are going out of date in some of our larger cities and elevated and underground transportation are being advocated. New sanitary questions will be raised by these changes and it is worth while to make some inquiry for the benefit of the public as to all the possible dangers.

The subject is taken up by Dr. Louis C. Parkes in the Public Health article of the *London Practitioner* for February. He points out the dangers to health from the confined air in subways. He shows that the amount of carbonic acid gas is increased in the atmosphere of the railway tubes and that the sanitation of the Central London Railway underground line, as shown by most recent investigations, is very bad, especially at the times when the traffic is greatest. Air of the carriages has been found to contain as much as 15 to 25 parts of carbonic acid per 10,000, or four or five times as much as in the atmosphere. While this is unquestionably deleterious to health, even though breathed for a comparatively short time, there are still other dangers to which he calls attention in subway traveling, such as the danger in the warm summer and the cold winter months alike of bodily chilling. In hot weather the traveler changes suddenly from a warm street to a much colder atmosphere and in winter the reverse happens. Then, again, the air is so confined that it can not purify itself of carbonic acid gas, and also contains a large amount of organic material and the dangers of contagion, tuberculous infection, etc., are vastly increased. It is impossible to prevent overcrowding of these cars at certain periods of the day, and this greatly aggravates the conditions. He also speaks of the tendency of large numbers of people living adjacent to these routes and traveling by tube to their working places and back again to their

[1] Deut. Arch. f. klin. Med., 1902, lxxii, 1.

homes, living their whole lives in an artificial atmosphere. What can be expected, he asks, from such a mode of existence but physical degeneration and lowering of the national health?

While this is at present more especially a London problem and one hardly yet applicable to American conditions, except possibly in New York City, it is still one to which, in view of future possibilities, we can give our careful attention. He thinks there is danger of the passive and little-assertive Londoner being rushed into costly and ill-digested schemes of multiple "tube" transit. It is a pretty generally acknowledged fact that in matters of public grievance the English are better "kickers" than the Americans, and we would do well to take some of this warning in this country where underground transit projects are being considered. The question of rapid transit in our municipalities is very far from being settled. We should utilize the experience of older countries where methods like the underground railways, etc., have been long in use and have afforded chances for observation of their effects.

MICHIGAN BOARD UPHELD.

It is well known to our readers that the Michigan State Board of Registration has had trouble almost from the beginning with a certain class of practitioners, and more especially certain of the graduates of the Armstrong diploma mills of Chicago. The strife has been carried up through the courts until it finally reached the highest tribunal in the land, and a decision has only recently been handed down. This was delivered by Judge Brewer and not only establishes a precedent, but fixes the status and authority of such medical boards, at least in certain particulars. The judge says in part: "The power of the state to make regulations providing for determining the qualifications for those engaged in the practice of medicine and punishing those who attempt to engage therein in defiance of such statutory provision, is not open to question." The state courts are the tribunals in which the question of the constitutionality of the acts as regards the state constitution is to be decided, and in this decision it is said that there is no decision known in the federal constitution forbidding a state from giving to a tribunal, whether it be called a court or a board of registration, the final determination of a legal question. Certain minor points which have been brought up by the plaintiffs were also settled, and the decision as a whole is a valuable one as establishing jurisdiction of registration boards and the legality of medical practice acts.

THE THERAPEUTICS OF THE CACODYLATES.

Within the last few years much has been published in regard to certain special arsenical compounds and their therapeutic value. These compounds, cacodylates, were found to be practically non-toxic in large doses, and it was claimed that they produce many of the therapeutic results of the basal element. Some recent investigators, however, have thrown discredit on the therapeutic efficacy of these drugs, claiming that they are practically inert in the system. They have, nevertheless, been found to produce certain symptoms, not those of ordinary arsenical preparations, which are of disadvantage. More recently, to obviate these latter disadvantages, still another organic compound of arsenic, disodic methyl arsenate, has been introduced and given the name of arrhenal, and has formed the subject of a number of clinical contributions. At a meeting of the Edinburgh Medico-Chirurgical Society, January 21, the president, Sir Thomas R. Fraser, reviewed the subject, calling attention to the fact that the efficacy of arrhenal had been combated, more especially its efficacy in malarial affections. He reported cases in his own practice where it had been given as a substitute for the ordinary arsenical preparations, but without the results that might have been expected were its effects those of arsenic itself. He also made examinations in order to determine why these failures occurred, as to the chemical conditions, using tests of extreme delicacy and found no evidence that arsenic was retained in the body after the administration of the drug. As in the case of the cacodylates, according to later reports, it passes unaltered. The general results of Fraser's observation were that arrhenal was practically an inert substance, that it can not produce either the pharmacologic action or the toxic effects of the arsenic ion and that, therefore, it is incapable of exerting remedial or therapeutic effects of the commonly used compounds of this substance. It seems now probable that both the cacodylates and this more recent substitute will pass into disuse unless some special properties not those of arsenic are absolutely determined. The enthusiasm with which these were at first received appears to have been unwarranted by fuller experience and may be taken as another instance of ill-judged medical faith in a remedy which is often one of the misfortunes of the profession.

Medical News.

CALIFORNIA.

Lehman Acquitted.—Dr. Charles A. Lehman, San Diego, who has been on trial charged with practicing medicine without a license, was acquitted February 19.

Will Not Change Law.—The Assembly Committee on Public Health and Quarantine has reported against the bill changing the law regulating the State Board of Medical Examiners, and providing that medical graduates must be given certificates to practice without further examination.

Plague Stamped Out.—Governor Pardee has transmitted to the legislature a message from the surgeon-general of the United States Public Health and Marine-Hospital Service, announcing that no plague has been discovered in San Francisco since Dec. 11, 1902; that searching inspections are being made daily in Chinatown and that no infected rat has been found since Dec. 8, 1902.

Births and Deaths in San Francisco.—The deaths in San Francisco during January numbered 783, equivalent to an annual death-rate of 21.44 per 1,000. The death rate for the corresponding period of 1902 was 24.96. The births registered were 544, equivalent to an annual rate of 15.91 per 1,000. Tuberculosis caused 125 deaths; heart disease, 87; pneumonia, 85; nephritis, 47; and violence, 71.

Cancer Specialist Held Responsible.—As a result of the coroner's inquest in the case of a patient under the care of S. R. Chamley, an advertising cancer specialist of San Francisco, the jury found that deceased came to her death from hemorrhage from an operative wound in the breast, through lack of knowledge of the attending physician, Dr. S. R. Chamley, and further found him responsible for her death. It also

recommended that Dr. Chamley's license be revoked for falsely certifying to the board of health as to the cause of death.

COLORADO.

Hospital Incorporated.—The Fairmount General Hospital Association has been incorporated at Pueblo by Drs. Thomas A. Stoddard, Ferdinand G. Mohlau, Charles O. Rice, and others.

Farm for Use of Consumptives.—David Brothers has given an improved farm of 36 acres, valued at $20,000, to the Y. M. C. A. of Colorado, to be used in connection with its proposed sanatorium for consumptives. A large number of tents will be erected as domiciles for the patients, who will be expected to work on the farm in part payment of their board and lodging.

Medical Bill Amended.—The Sanford bill, which passed the house February 7, was delayed when it reached the senate, which body amended it. One of the amendments provides for a state board of medical examiners, to be composed of 12 members, six of whom are regulars, two homeopaths, two eclectics and two osteopaths. Applicants are to be examined by that fraction of the board representing their desired line of practice.

State Board of Health Reorganized.—The board met at Denver, February 19, and reorganized, electing Dr. Josiah N. Hall, Denver, president; Dr. William H. Davis, Denver, vice-president; Dr. Claude E. Cooper, Denver, secretary, and Dr. Frank N. Carrier, Canon City, treasurer. The governor has appointed Drs. William H. Davis, Denver; Frank N. Carrier, Canon City, and Edward A. Mattoon, Salida, new members of the board.

DELAWARE.

Personal.—Dr. Pietro A. M. Rovith has succeeded Dr. John C. Fahey as physician of the Italian Mutual Beneficial Society of Wilmington.

Physician as Senator.—Newly-elected Senator Louis Heister Ball, Faulkland, who has previously served his state as treasurer, and as member of congress, is a practicing physician, and was graduated from the University of Pennsylvania in 1885.

Reception to Dr. Flexner.—Dr. Joseph P. Pyle, Wilmington, gave a dinner and reception to the physicians of Wilmington, February 3, at which Dr. Simon Flexner of Philadelphia was the guest of honor and delivered an address on the serum-therapy of diphtheria and typhoid fever.

DISTRICT OF COLUMBIA.

Personal.—Drs. John T. Dunn and W. Robert Perkins, both of Washington, have become resident physicians of Emergency Hospital, as the result of a competitive examination.

University of Vermont Alumni.—The fifth annual dinner of the Alumni Association of the University of Vermont was held February 27. Dr. A. F. A. King of Washington was elected president.

Health of the District.—Report of the health officer for the week ended February 21 shows the total number of deaths to have been 135, of which 74 were white, 61 colored, number of births 76, 45 white, 31 colored. At the close of the week there were under treatment 101 cases of typhoid fever, 12 of scarlet fever, 6 of diphtheria, 8 of smallpox.

New Hospital and School Opened.—The new hospital and building for the department of medicine and dentistry of the Columbian University were formally opened February 28. The new hospital contains private rooms and medical and surgical wards, with three operating rooms and a dispensary. The new medical building has four lecture halls, each seating from 200 to 350, large laboratories for chemistry, pharmacy, histology, physiology, bacteriology, pathology and anatomy, with recitation rooms, museum, library, reading rooms, etc.

To Prevent Epidemics.—Representative Smith of Illinois has introduced a bill in the house to prevent the spread of communicable diseases in the district. The bill provides that every person in charge of any patient who is suffering from measles, whooping cough, chicken-pox or epidemic cerebro-spinal meningitis, immediately after becoming aware of the existence of such disease, shall send to the health officer of the district a certificate, stating the name of the disease; the name, age, sex and color of the patient; the school which he or she has attended, if any, and the name of the physician, if any, in attendance on the patient; and designating the place in which the patient can be found. If the patient recover, the person in charge must send to the district health officer a certificate to that effect. But no person shall certify that a patient has recovered until he is free from danger of communicating the disease to other persons. Every physician attending any patient suffering from communicable disease, immediately after discovering the nature of the disease, must notify the person in charge of the patient of its nature and that the person in charge is required by law to report the case to the district health officer. The bill makes it unlawful for any person in the district suffering from a communicable disease or from symptoms which so resemble those of a communicable disease that they can not be distinguished therefrom with reasonable certainty, or for any physician attending or examining any such patient, or for any person in charge of such patient, to do any act reasonably likely to cause the spread of such disease, or to omit the performance of any act reasonably likely to prevent the spread of such disease. Any person who violates, or aids or assists in the violation of any of the provisions of the proposed act is made liable to a fine of $100 or to imprisonment in the workhouse for thirty days.

ILLINOIS.

Fire at Marion.—A fire which broke out at Marion, February 19, destroyed the offices of Drs. George W. Evans and Griffin Baker, Jr.

To Clear Title.—The University of Illinois has transferred to the College of Physicians and Surgeons, Chicago, the property now used as the medical department of the university. The transfer is made for technical reasons, to clear title.

Veterans Are Dying.—Statistics prepared by the adjutant-general of the department of Illinois, Grand Army of the Republic, show that in the year just closed there were 702 deaths among the 21,725 members in Illinois, a death rate of 30.8 per 1,000.

Personal.—Dr. Samuel M. Wylie, Paxton, has been elected to fellowship in the German Surgical Society.——Dr. James A. Marshall, Pontiac, declares his intention of resisting discharge as physician of the state reformatory at Pontiac, on the ground that the institution is under civil service supervision, and that no employe can be discharged for political reasons.

Hospital to Celebrate Silver Jubilee.—St. Francis Hospital, Peoria, is making extensive preparations for the celebration of its twenty-fifth anniversary, March 20, 21 and 22. In 1878 a building which cost about $10,000 was the home of the hospital. In October, 1901, the new hospital was opened, which cost $125,000. The institution also has branches at Bloomington, Ill., Menominee, and Marquette, Mich.

Chicago.

Widow Sues Physician.—Mrs. Mary Kerwin has sued Dr. Thomas J. Balhatchet on the charge of larceny as bailee, claiming that he withheld $1,023 of insurance money on her husband. Dr. Balhatchet claims that he attended the plaintiff's husband, receiving in lieu of fees for medical service, promissory notes, secured by the insurance policy. He characterizes the suit as an attempt to extort money.

Personal.—Dr. Casey A. Wood has returned from a stay of several weeks in the east.——Dr. Seward P. Gibbs was struck by a cable car, February 19, and seriously injured.——Dr. Maurice F. Doty has been elected president of the Referendum League.——Dr. George E. Cooke has moved to Arlington, Ky. ——Dr. Augustus L. Craig, who was recently robbed of a suit case containing valuable securities, was so fortunate as to have them recovered by the Kansas City police.

Record-Breaking Mortality.—The 713 deaths recorded during the week ended February 28, represent an annual mortality rate per 1,000 of 19.73; and the 2,570 deaths in the month give an annual death rate of 18.30 per 1,000. These figures break all records for a week in February, and the rate for the month is the highest recorded since 1882. As compared with February, 1902, however, there were 16.2 per cent. more deaths over 60 years of age and 4.6 per cent. fewer under 5 years of age.

IOWA.

The Board's Work.—During 1902 the State Board of Medical Examiners issued 538 certificates, 300 of which were issued to osteopaths. Of the remainder 211 were regulars, 24 homeopaths and 3 eclectics.

Personal.—Dr. George Kessel, Cresco, was thrown from his buggy, February 22, fracturing his left arm near the wrist and breaking his nose.——Dr. Lysle Reppert, Muscatine, has returned after a year of study in Europe.

Golden Weddings.—Dr. and Mrs. Benjamin F. Keables, Pella, celebrated the fiftieth anniversary of their marriage, February 24.——On New Year's evening Dr. and Mrs. Joseph

L. Powers, Reinbeck, commemorated their semi-centenary of married life.

Itinerant Physician Indicted.—Dr. Edwin E. Rohrabaugh, an itinerant rupture specialist of Chicago, arrested at Des Moines on the charge of practicing without a permit from the State Board of Health, was found guilty, gave bond of $1,000 to appear for sentence when called on, and left the city.

Faculty Member Resigns.—Dr. Charles Henry Hoffman, professor of histology and bacteriology in the medical department of Drake University, Des Moines, has resigned because he refused to give his real name. For the same reason he resigned as censor of the Des Moines Pathological Society. He admits that he is bound by honor not to reveal his true name until he has permission to do so.

MARYLAND.

Minute Damages.—The suit of Mr. R. E. Lee Bosley of Towson, former sanitary officer, against Dr. R. C. Massenburg, for $10,000 damages, resulted in a verdict of one cent.

Smallpox at Chestertown.—There are three cases of smallpox at Chestertown. Dr. G. W. C. Rohrer of the City Hospital has been engaged to attend them at $10 per day, and a house is being erected near the pesthouse for his residence.

Physician Fined for Assault.—At Hagerstown, February 24, a fine of $200 and costs was imposed on Dr. P. Elwood Stigers, Hancock, for assault on a dentist of the same place. The court said it was a most grievous offense, and that only the numerous appeals for clemency saved the accused from imprisonment.

For New Epileptic Ward.—Plans for the new epileptic ward at Maryland Hospital for the Insane (No. 2) are being prepared. The cost will be $25,000. It will be detached from the other buildings, but will conform to them in style. The dormitory on the second floor will be 21 by 157 feet, and will accommodate about 90 patients. There will be six private rooms in each wing, and on the second floor will be a sun parlor 20 by 33 feet.

New Hospital for Eastern Shore.—The plans have been completed for a new hospital at Cambridge. Of the $40,000 required for the purchase of site and building, Mr. John E. Hurst, Baltimore, has contributed $15,000, the state and Cambridge each $5,000. The site will be a bluff, the highest point in the town. The building will be of brick, in colonial style, 136 feet long, and varying from 51 feet deep at the center to 36 feet at the wings. There will be a basement and three stories and accommodations for 35 patients. The local staff consists of Drs. Brice W. Goldsborough, John Mace, Guy Steele, and Eldridge Wolff; the surgeons are Drs. Nathan R. Gorter and Thomas S. Cullen, Baltimore, and the oculists are Drs. Herbert Harlan and Henry O. Reik, Baltimore.

Baltimore.

Personal.—Drs. Frank D. Gavin and Thomas S. Cullen have returned from a pleasure trip to Jamaica.

The Week's Deaths.—The mortality was nearly normal last week, the death rate being 19.90 per 1,000 per annum for the whole population. Pneumonia caused 42 of the 212 deaths, bronchitis 11, grip 7, and measles 4.

Tuberculosis Mortality.—The statistics of the Tuberculosis Commission show that the death rate in Baltimore is nearly twice that of the state in the cases of whites, and that the mortality among negroes is twice as great.

Abortionist Sentenced.—Dr. William B. Hawkins, whose conviction of manslaughter by criminal operation was mentioned last week, has been sentenced to 10 years in the penitentiary, the maximum penalty. His lawyers have appealed the case.

Offer of Hospital Site Refused.—A recent offer of a piece of ground of 40 to 50 acres with a large three-story house on it, large enough for 50 beds, to be used for a children's country hospital, has been declined by the authorities of the Robert Garrett Children's Hospital, who have provision in this respect. It has, therefore, been offered to Washington, to which it is nearer than to Baltimore.

Dispensary Report.—The forty-ninth annual report of the Northeastern Dispensary shows that 9,588 persons attended during the year; 5,701 white, 3,887 colored. The appropriation of $1,500 by the state and the contract with the city have put the institution in a good financial footing, while the election of a board of lady managers has added much to its efficiency. Dr. Arthur Wegefarth is president.

MASSACHUSETTS.

Boston's mortality rate has been exceptionally low for the last few weeks. During January there was a good deal of influenza, but the cases were generally of a mild type and not often preliminary to pneumonia, as in some epidemics. Early in February even this mild epidemic abated.

Memorial Infants' Hospital.—A gift of $76,000 to establish an infants' hospital as an adjunct to the Harvard Medical School, is announced; $60,000 more is promised, and the entire gift will be a memorial to Thomas Morgan Rotch, class of '01, Harvard. The site will be adjacent to the medical school, which will be built in the Longwood section of Boston.

The New Harvard Medical School.—Work will be commenced on the new buildings for Harvard Medical School, in the near future. They will occupy a 26-acre lot in the Back Bay Fens. Seven buildings will be erected; five for the medical school, one for the dental school and one for a power house. They will cost more than $2,000,000, and are expected to be ready for occupancy in 1904.

Foot and Mouth Disease.—This disease has again gained a foothold in Massachusetts. A large district of the state has been strictly quarantined and most vigorous efforts are being made to stamp the disease out. Believing that stray cats and dogs are carrying the disease, all such visiting by these animals within that district is forbidden. Pigeons are also suspected by Dr. Salmon of being carriers of the virus, but inasmuch as the virus is submicroscopic it is difficult to prove these suspicions. Few, if any, cases of the disease in children have occurred in the state, which fact accords with the general experience that the disease is only rarely transmitted from animals to men.

Meetings Successful.—The meetings held at the Boston Medical Library this winter have been a great success. In place of the usual dozen or twenty men, the physicians of Boston and vicinity have assembled by the hundred. Dr. William T. Councilman has presided, and the committee have provided a series of excellent papers. At the last meeting, February 23, Dr. Townsend demonstrated that his method for pouring off the upper quarter of a quart of milk which has stood 8 hours yields cream of a uniform percentage of about 10 per cent. fat. Papers were also read on "An Analysis of 117 Specimens of Mother's Milk," "Foot and Mouth Disease," and a lantern slide lecture was given on "Congenital Hip Disease," by Dr. Bradford. The so-called bloodless method was fully explained, and its limitations pointed out. A photograph was shown of a child treated successfully by this method by Dr. Dam at the Boston Children's Hospital several years ago.

MICHIGAN.

Medical Law Sustained.—The United States Supreme Court has sustained the validity of the Michigan law regulating the practice of medicine, affirming the decision of the Supreme Court of Michigan in the case of August G. Reetze, who attacked the validity of the law.

January Mortality.—There were 2,856 deaths reported during January, corresponding to a death rate of 13.5 per 1,000 population per annum. This is 190 more than that registered for the preceding month, and 32 more than the number registered for January, 1902. There were 550 deaths of infants under 1 year, and 906 deaths of persons aged over 65. Tuberculosis caused 195 deaths; typhoid fever, 48; diphtheria, 58; scarlet fever, 36; measles, 13; whooping cough, 40; pneumonia, 382; influenza, 39; cancer, 140; accidents and violence, 126, and smallpox, 7.

Mortality for 1902.—The total number of deaths registered in the state during 1902 was 30,962, corresponding to a death rate of 12.6 per 1,000. For the year 1901 the number of deaths registered was 33,848, and the death rate was 14.0. There were 2,886 fewer deaths registered for 1902 than for the preceding year. At certain important ages, deaths were proportioned as follows: Infants under 1 year of age, 5,754, or 18.6 per cent.; children aged 1 to 4 years, both inclusive, 2,214, or 7.2 per cent., and persons over 65 years, 9,081, or 29.3 per cent. These ratios were substantially the same as for the preceding year. The total number of deaths from certain important causes during the year 1902 was as follows: Tuberculosis of lungs, 2,030, a decrease of 58 from 1901; other forms of tuberculosis, 323, a decrease of 10; typhoid fever, 592, a decrease of 43; diphtheria, 500, an increase of 2; scarlet fever, 261, a decrease of 25; measles, 229, an increase of 156; whooping cough, 290, an increase of 136; pneumonia, 2,907, a decrease of 86; diarrhea and enteritis, under 2 years, 1,350, a decrease of

320; meningitis of all forms, except traumatic and tuberculous, 496, a decrease of 37; influenza, 373, a decrease of 881; puerperal septicemia, 168, a decrease of 15; cancer, 1,441, a decrease of 2, which may be rather remarkable as perhaps marking a turning point in what has heretofore been a progressive increase of this disease; accidents and violence, 1,951, a decrease of 87.

NEW YORK.

Sale of Adulterated Milk.—The senate has passed a bill providing that the sale of each can of adulterated milk shall constitute a distinct violation of the law.

State Medical Inspector.—A bill has been introduced into the senate providing for the appointment of a state medical inspector at a salary of $5,000 a year, to be appointed by the State Commission in Lunacy, and whose duty it shall be to examine patients and hospitals for the insane.

Typhoid at Ithaca.—During the past week there have been 15 or 20 new cases daily, and the total number of deaths among the students at Cornell has reached 17. Many of the new cases seem to be the result of secondary infection. The local board of health adopted a resolution making it a misdemeanor for any one to drink, or serve to others, unboiled water supplied from the local water company's system.

Personal.—Dr. George K. Meynen, Jamaica, has been appointed chief surgeon of the Long Island Railroad, vice Dr. J. Frank Valentine, deceased.——Dr. Julius F. Wingenbach, Utica, has been made surgeon of the Twenty-eighth Separate Company, N. G., N. Y., vice Dr. William A. Burgess, removed to Cheyenne, Wyo.——Dr. Albert H. Brundage, Brooklyn, has been elected president of the New York State Board of Pharmacy.

Registration of Nurses.—According to a bill introduced by the New York State Nurses' Association, no one is to be styled or known as a registered nurse, or use the abbreviation "R.N." who does not hold a diploma from a training school for nurses connected with a hospital giving a course of at least two years, and who is not registered by the regents of the University of the State of New York. The regents are to appoint, annually, a board of five examiners.

Pure Drug Bill.—A bill, having some peculiar provisions, has been introduced into the legislature by Assemblyman Bostwick, and it has already developed a strong opposition. It is aimed at patent medicine companies, but other drug dealers suffer as well. It compels the labeling of all medicines and drugs, showing what their ingredients are and proof of purity. The label must also state at what time the drug deteriorates and the date when it was put up. Mr. Bostwick now admits that the bill is not as good as he at first thought, but insists that the provision that no druggist shall substitute one drug for another without the knowledge and consent of the buyer should be enacted into law.

New York City.

Lebanon Hospital.—The tenth anniversary of Lebanon Hospital, in the Borough of the Bronx, was celebrated with appropriate ceremonies, February 22.

Columbus Hospital Extension.—This hospital has purchased, in the rear of the present building, three three-story dwellings, which are to be converted into an extension for the institution.

Bellevue Hospital.—The much-needed building for Bellevue Hospital is not long to be delayed, for the first appropriation of $75,000 for the preliminary work has been made, and it is stated that the cost of the new hospital will reach $3,000,000. A new building is also to be built for Fordham Hospital at a cost of $500,000.

Child Labor.—There has been so much evasion of the present laws regarding child labor that a bill has been introduced into the legislature, which prohibits the employment of children under 16 years old in certain dangerous occupations, requires children between the ages of 12 and 14 to attend school throughout the school year, and makes it necessary to produce the certificate of birth, instead of the parents' affidavit of age, before certificate of employment can be granted to children under the age of 16.

Personal.—Dr. S. Oakley Vanderpoel, medical director of the New York Life Insurance Company, is taking a trip to the Continent, via San Francisco.——Dr. John A. McCorkle, Brooklyn, has been elected president of the Long Island College Hospital. In honor of Dr. McCorkle, nearly a hundred of his colleagues gave him a dinner, February 14.——The reappointment of Dr. A. H. Doty as health officer of the port of New York has been confirmed by the senate.——Dr. Farquhar Ferguson has been transferred from visiting to consulting physician of the Columbus Hospital; Dr. Frederick C. Keller has been appointed attending physician, and Dr. Henry Hazen, attending physician in diseases of children.

PENNSYLVANIA.

Action Against Smallpox.—To stamp out the smallpox epidemic in Bristol, Pa., the mill owners have contributed $5,000 to be used by the board of health. A special hospital is to be erected, and a house-to-house canvass is to be made by vaccine physicians.

A Legislative Visitation.—Members of the house of representatives committee on appropriations, to the number of a score or more, recently spent several days in Philadelphia on a tour of inspection to the institutions, including many hospitals, which have applied for state aid.

Makes Plea for Poor Consumptives.—Dr. Lawrence F. Flick, Philadelphia, was given a hearing by the house of representatives in his advocacy of an appropriation of $300,000 to the Free Hospital for Poor Consumptives. Of such an appropriation, $200,000 would be used to extend the White Haven Sanitarium by an addition of 200 beds; $50,000 for intermediate places to treat patients not well enough to go to White Haven, and $50,000 for dispensaries in first and second-class cities for the treatment of walking cases.

To Raise Standard of Preliminary Education.—A bill introduced into the legislature seeks to raise the standard of education preliminary to a medical course. The bill requires from candidates for license to practice medicine a diploma of graduation from a reputable college or university, or a diploma of graduation after a four years' course at a state normal, a high school or academy, or a certificate of having passed the examinations for admission to the freshman class of a reputable literary or scientific college or university. The bill provides that, after Jan. 1, 1907, applicants for license must furnish proof that they have pursued the study of medicine for four years, for at least eight months in each year, in four different calendar years, in some legally incorporated reputable medical college.

Philadelphia.

The Children's Hospital.—This institution, a new structure forming a part of the Philadelphia Hospital, has been completed for a few months, but has very recently been equipped and occupied by some 60 inmates from different departments of the institution. Room is provided for 50 more patients.

Personal.—Dr. James Tyson, professor of the theory and practice of medicine in the medical college of the University of Pennsylvania, has been appointed a visiting physician to the Pennsylvania Hospital, the place made vacant by the death of Dr. Frederick A. Packard. Dr. Tyson resigned as visiting physician to the Philadelphia Hospital, and the place has been filled by the appointment of his son, Dr. T. Mellor Tyson.

"Med-Chi" Troubles.—Contractors refuse to make proposals for the repair of Medico-Chirurgical Hospital, recently damaged by a boiler explosion, asserting that, owing to the peculiar nature of the damage, no reliable estimate can be made. The work of repairing will likely be done by the day. Some liberal contributions towards the expense of repairing have been made, but donations are far short of the necessary amount. The Baldwin Locomotive Works Company has donated $5,000 for the maintenance of a free bed.

Deaths and Disease.—For the week ended February 28 there were 12 more new cases of smallpox, 7 of typhoid fever, 1 of diphtheria, and 15 of scarlet fever than for the previous week. From all causes there were 639 deaths, an increase of 57 over the previous week, 47 more than for the corresponding week of last year, and 101 more than for the corresponding week of 1901. Besides the prevalence of the contagious diseases mentioned, affections of the respiratory tract, influenza, bronchitis and pneumonia claim many victims.

The Carnegie Gift Secured.—Andrew Carnegie's gift of $50,000 towards a commodious library for the College of Physicians is assured, as the additional $50,000 which it was stipulated should be raised by the college before his gift was available, has virtually been pledged. An important question to be determined by the college now arises, namely: Whether to increase the height of the present structure or to purchase a new site and erect thereon an entire new building? The latter plan, favored by many of the fellows, would necessitate the raising of a large additional sum.

GENERAL.

X-Rays for Hodgkin's Disease.—A case of lymphadenoma treated by *x*-rays with marked improvement at the University of Colorado Hospital at Boulder suggests the value of further investigations along this line.

Actors' Tuberculosis Sanatorium.—It is said by one of their number that 50 per cent. or more of actors die of tuberculosis. A project is under way to establish in Colorado or New Mexico a sanatorium where actors affected with this disease may find a home and treatment.

Address on Ophthalmology at New Orleans.—Dr. W. Uhthoff, professor of ophthalmology in the University of Breslau, and one of the best known authorities on the pathology and bacteriology of the eye, will give an address before the Section on Ophthalmology of the American Medical Association at New Orleans in May.

Whiting Caught.—Word has been received that Whiting, who has been representing himself to be an agent of THE JOURNAL and the American Medical Association, has been apprehended and is held by the police authorities of Jamestown, N. Y. Physicians in that state who have been defrauded by this individual should at once enter complaints with the chief of police of Jamestown, and physicians in Pennsylvania should communicate with the chief of police of Reading.

The Samuel D. Gross Prize.—The Philadelphia Academy of Surgery announces that this prize of $1,200 will be awarded Jan. 1, 1905, to the writer of the best original essay, illustrative of some subject in surgical pathology or surgical practice, founded on original investigations, the candidates for the prize to be American citizens. The essays should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 219 South Thirteenth street, Philadelphia," of whom further particulars may be had.

New Board of Medical Examiners in Hawaii.—Some time ago a board was appointed by the acting treasurer, and later this appointment was called illegal. As mentioned at that time in THE JOURNAL, the physicians whose licenses were thereby invalidated began suit to prevent their re-examination being required. This suit was never brought to trial, and the question arose as to where the appointing power rested. As the result of a recent conference it was decided that the governor should appoint this board of examiners, which he has accordingly done. A number of physicians are waiting examination.

CANADA.

McGill's President Honored.—Dr. William Peterson, president of McGill University, Montreal, had conferred on him the degree of doctor of laws, at Philadelphia, February 21, by the University of Pennsylvania, the occasion being the celebration of Washington's birthday.

An anti-cigarette deputation recently waited on Premier Laurier at Ottawa and presented a largely signed petition praying for the absolute prohibition of the manufacture, importation and sale of cigarettes. The premier has promised consideration on behalf of himself and colleagues.

Manitoba's Health for 1902.—There was no fatal form or epidemic of infectious or contagious diseases in Manitoba in 1902, although there were a number of cases of smallpox in the early part of the year. There were many cases of typhoid fever and the usual number of cases of diphtheria.

British Columbia Quarantining Against the State of Washington.—Owing to laxity of quarantine regulations at Blaine, Wash., where many cases of smallpox exist, the British Columbia authorities have increased the number of special officers assisting Dr. Kendall in preventing any one coming across the line into the province.

Cost of Maintenance in Toronto Hospitals.—The total cost of maintenance in the leading five hospitals of Toronto last year was as follows: General, $85,841.34; Western, $15,504.71; St. Michael's, $39,224.19; Grace, $23,021.14; Sick Children's, $35,000. The cost per patient per day was: General, $0.935; Western, $0.625; St. Michael's, $0.60; Grace, $0.77; Sick Children's, $0.88.

New Maternity Ward for Victoria, B. C., Hospital.—An early start will be made in the erection of a new maternity ward to the Provincial Royal Jubilee Hospital. Lord Strathcona has written the hospital authorities consenting that his donation of $5,000 to the hospital may take that disposition. The total number of patients admitted to the wards during January was 78, and the number treated, 137.

FOREIGN.

Puericulture at a Young Ladies' Seminary.—Professor Pinard is giving a course of lectures on the care of babies before a young ladies' seminary at Paris.

Association of Directors of Sanatoria.—The third annual assembly of the directors of sanatoria in Germany is being held in Berlin this week. One of the principal subjects under discussion is the organization of a training school for attendants which the University Institute of Hydrotherapy has agreed to establish.

Retirement of Hitzig.—Dr. E. Hitzig, director of the clinic for nervous diseases and the polyclinic at Halle, has resigned his professional duties on account of a progressive eye affection. When he organized the clinic for psychiatry and nervous diseases in 1885, it was the first institution of the kind connected with any Prussian university. His name is, perhaps, best known by his studies on cerebral localizations.

Tuberculosis in Germany.—The following facts are gathered by the German department of health:

Out of 1,000 deaths in Germany of persons between the ages of fifteen and sixty, 316 are from tuberculosis. Persons under fifteen and over sixty are seldom affected. The mortality of the whole population has averaged 242 per 100,000 yearly, rising in the Bavarian Palatinate to 329, in Bremen to 337, and in Hesse to 314. The conditions in Germany are shown to be better than in France, Austria, and Russia, but worse than in Switzerland, Belgium, Denmark, Norway, and, especially, England.

Consumption can best be treated in special hospitals, in which Germany now has accommodation for 30,000 patients.

A Spartan School in Switzerland.—The *Journal de Med. de Paris* describes a boys' boarding school in successful operation at Sekingen in Switzerland, near Basle. The boys are brought up in the strictest simplicity and as close to nature as possible. Unusual facilities for bathing are provided, but the water is never warmed. The lads wear sleeveless shirts, sandals instead of shoes, and no caps. The handkerchief is fastened to the belt, as no pockets are allowed. The school has developed many strong boys out of puny ones, and Professor Ringele, the director, is now establishing a school for girls on the same principles.

Charlatans in Berlin and Its Province.—The Berlin Medical Chamber has been collecting information in regard to charlatans, and finds that there are 600 in Berlin alone and 383 in the province. The police have knowledge of 185 cases in which injury has resulted from their practices, proving fatal in 24. Extraordinarily excessive money demands were known in 10. In some of the cases the damage done reacted to the pecuniary disadvantage of sick benefit or life insurance companies. The department of public works has recently ordered the railroad officials to warn the employes explicitly against the dangers of resorting to nature healers.

Silver Jubilee of Prof. F. Bezold of Munich.—A souvenir number of the *Zeitschrift für Ohren-Heilkunde* was presented to Bezold on the twenty-fifth anniversary of his professional career by his pupils and assistants, some of whom had traveled from distant lands to bring their congratulations. The festivities included a speech by six deaf mutes from the Deaf and Dumb Asylum, whose utterance was surprisingly good. They thanked him for his achievements on behalf of the deaf and dumb. The *Muench. Med. Woch.* of February 10 brings an excellent portrait of Bezold, the one hundred and fortieth in its "Gallery of Prominent Medical Men."

Wireless Telegraphy the Invention of a Physician.—The first private wireless message sent across the English channel was from Marconi and was addressed to Dr. E. Branly of Paris. It was a message of congratulation on the success of wireless telegraphy, "due in part," it stated, "to the remarkable labors of Dr. Branly." As long ago as 1890 he reported experiments before the Académie des Sciences which established the practicability of telegraphing without wire communication, and the Comptes Rendus of the Académie and of journals devoted to physics contain many reports by him. He is professor of physics at Paris and the last *Gazette Med. de Paris* contains his portrait and an interview on the subject of his discoveries, which contained the germ of wireless telegraphy and the opening and closing of an electric circuit at a distance.

Struggle to Maintain Ethical Principles.—In Witten, another German city, a conflict between the physicians and the sick benefit society is impending like the one now in progress at Gera. Our readers will remember that the physicians connected with a certain *Krankenkasse* refused to serve longer when a "nature healer" was added to the medical staff on the same terms as the rest. The *Kasse* has been unable, to date, to

find any physicians willing to take their place, although it is advertising for them in the Berlin papers, etc. The Leipsic Verband, or "Union for Protection of the Economic Interests of the Profession," is sustaining the Gera physicians, both morally and materially. They have officially announced that they will aid the *Kassen* members in any emergency, give first aid, etc., but decline further attendance until the "nature healer" is dismissed.

The New Moscow Cancer Hospital.—Professor Lewschin of Moscow has succeeded in organizing a cancer hospital, which is said to be a model in every respect. Contributions of more than $175,000 were collected for the purpose, and the university has taken the new institution under its charge. The word cancer is omitted from its name, and it is known as the "Tumor Clinic and Asylum." Four large laboratories for special research are installed in it, and the operating rooms are lighted by seven large windows and glass roof. All the inner corners and angles are rounded, and the floors slope slightly to the drains. At all the wash rooms there are special cranes and handles, so that the vessels can be washed without touching them with the hands. Lewschin has written a circular of questions concerning cancer patients, which the authorities have sent to 15,000 physicians in Russia, and 5,000 replies have already been received. A recent letter to the *Deutsche Med. Woch.*, in addition to the above items, mentions that the number of deaths from cancer at Moscow has risen from 411 in 1880 to 832 in 1896.

Fourteenth International Medical Congress.—Particulars in regard to the numerous excursions in Spain, open to the members of the congress, have been received at this office. A reduction of 50 to 30 per cent. is allowed on presentation of the coupon membership ticket to be given each member. The transportation is in the hands of the transportation company, the "Voyages pratiques," 9 rue de Rome, Paris, which will furnish further particulars and circulars on demand. Special trains for the members will leave Irun and Port Bou for Madrid on certain dates. The congress will convene April 23 to 30. The committee in charge of lodgings announces that there are a large number of hotels at Madrid whose table and comfort vie with those of the larger European cities, and many of the best private families have volunteered to open their homes to the members, so that thousands of lodgings are provided for, at rates ranging from 13 to 50 pesetas a day, that is, about $2.60 to $10. The committee urges the necessity, however, of early application for lodgings to secure first choice. Mr. Ulrich Frei has charge of the matter, and should be directly addressed. The king and queen regent are to offer the members a garden party and a general reception at the palace. The municipality has organized a special fête with, probably, a gala performance at the Theatre Royal. There will also be a special bull fight for those who wish to visit this national institution. In addition to these general affairs, the sections expect to organize special excursions, etc., for their members. Mail should be addressed to the members, with the name, followed by "Membre du xiv Congrès International de Médicine, Section de ———" (concluding with the name of the country in which the member resides). Membership fees (25 francs, or $5 in a draft on Paris) may be sent directly to the secretary general, Dr. A. F. Caro, Faculté de Médicine, Madrid, or, until March 20, to the national committees. The secretary of the American committee is Dr. Huddlestone, 126 West Eighty-fifth street, New York. Great interest is being manifested in the approaching congress in medical circles in Europe, and it will undoubtedly be a noteworthy gathering of prominent men. It seems probable that the congress will have presented to it the results of much research on serum therapy in various diseases. The complete program may be had of Dr. Huddlestone.

LONDON LETTER.

Lathyrism in Central India.

Lathyrism is prevalent in the central provinces of India. Major Buchanan, of the Indian Medical Service, and Mr. Stockman, professor of pathology in the Edinburgh Veterinary School, have been appointed to inquire into its cause and prevention. It is thought to result from the consumption in large quantities of the food grain known as *Lathyrus sativus*, or teora, when not prepared in such a way as to eliminate a poisonous principle. The clinical features are as follows: For two or three months before the onset the patient has been living almost exclusively on teora, which has been made into cakes and cooked, but not boiled. Then, for a few days, he feels weak and drowsy, with pains in the legs and occasional cramps in the calves. Suddenly, while at work, he falls and finds he is unable to rise. After this he is confined to bed for a month or two, and stops eating teora. The arms are not affected, and there is no loss of sensation, but the lower extremities are paralyzed and, in severe cases, there is loss of control over the sphincters and loss of sexual power. The condition of the leg muscles is one of marked spasticity; the knee jerks are exaggerated, ankle clonus is obtained and, when the patient stands for a few minutes without the aid of sticks, clonic spasms occur in the legs. There is also rigidity of the muscles of the spine, so that when sitting down the patient is unable to turn the upper part of his body around. Improvement is slow, but gradual, whether treatment is adopted or not. There is no fever and little or no muscular atrophy.

Food Poisoning and Epidemic Diarrhea.

At the Epidemiological Society, Prof. Sheridan Delepine read an important paper on the "Bearing of Outbreaks of Food Poisoning on the Etiology of Epidemic Diarrhea." He defined epidemic diarrhea as an infectious disease affecting many persons at the same time, especially during the hot season and in populous districts, where it causes a high infant mortality. Its bacteriology is far from being settled. Most observers believe that the *Bacillus coli communis* is the most important factor, but a spirillum, the *Bacillus enteritidis sporogenes*, various streptococci and *Bacillus lactis ærogenes* have been incriminated by others. Professor Delepine described various outbreaks, which he had examined, especially those of milk diarrhea at Manchester in 1894 and of pork pie and sausage poisoning at Derby in 1902 (recently described in THE JOURNAL). The general conclusions at which he has arrived are that epidemic diarrhea is caused by bacteria of the *Bacillus coli* group, the least virulent being those that most resembled the *Bacillus coli communis* and the most virulent being those that most closely approximate to the *Bacillus enteritidis*, especially the *Bacillus enteritidis* of Gärtner. The most dangerous are, consequently, those that acidify or coagulate milk or impart an offensive odor to it. The obvious precautions to be observed are cleanliness, consumption as early as possible, refrigeration to 4 C., or sterilization by heat.

The Serum Treatment of Poisoning by Snake Venom.

Two very important papers on this subject have been read at the Glasgow Medico-Chirurgical Society. Dr. George Lamb of the Indian Medical Service, who has minutely investigated the subject of snake bites, pointed out that the poisonous snakes of India might be divided into two groups—colubrine and viperine. An example of the former is the cobra, of the latter, the *Daboia russellii*, or chain viper. The poisonous principles of all snakes' venoms are albuminous substances, which vary in different species. Thus cobra venom contains no poisonous principle which is contained in daboia venom and *vice versa*. Hence the symptoms of poisoning by these venoms are very different. When a man is bitten by a cobra severe pain and swelling around the wound occur, after an hour or two nausea and lethargy begin, paralysis soon follows, and death usually takes place about six hours later from failure of respiration. On the other hand, daboia venom causes a large bloody extravasation around the wound, because it has destructive action on the capillaries and red corpuscles, and depresses the action of the heart, sometimes to a fatal extent. Hemorrhage may occur from all the orifices of the body. Paralysis is never produced, and recovery often takes place. Dr. Calmette of Lille, by immunizing horses with a mixture of snake veonms, of which cobra venom is the principal ingredient, has produced an antivenomous serum which is reliable in cases of cobra bite. But Dr. Lamb has found that it is useless in poisoning by daboia venom, and Martin of Melbourne has shown its inability to neutralize the venom of Australian snakes. In the treatment of cobra poisoning the object is to get the serum as quickly as possible into contact with the venom, which is effected by intravenous injection. If this can not be performed the serum may be injected subcutaneously. At least 40 c.c. should be injected. If after injection symptoms occur the dose should be repeated. The only other treatment of any use is tying a ligature about the bite. At present there is no serum for daboia poisoning. Cases can be treated only on general principles; diffusible stimulants help to tide over the stage of cardiac depression.

Dr. Walter K. Hunter then read a paper on the histological appearances of the nervous system in krait and cobra poisoning. His investigations were made on animals killed by Dr. Lamb in the course of his experiments on snake poisoning. In monkeys killed with krait and with cobra venom he found acute degenerative changes in the ganglion cells of the cord, medulla, and

pons, and in the peripheral nerves. In one monkey killed with cobra poison degeneration of nearly every nerve in the central nervous system was produced. In the cervical enlargement of the cord the outlines of the Nissl granules of the antero- and postero-lateral groups were blurred as if they had been acted on by some solvent. The rest of the cells of the anterior were degenerated, and without any granules whatever. In the lumbosacral enlargement these changes were still more marked. In the cerebral cortex there was acute chromatolysis of the majority of the pyramidal cells.

The Professor of Anatomy in the University of Edinburgh.

Sir Wm. Turner having been promoted to the principalship of the University of Edinburgh, the chair of anatomy became vacant. The curators of patronage have appointed Dr. D. J. Cunningham, F.R.S., professor of anatomy in the University of Dublin, to the position. He is pre-eminently qualified, having been eminent in that branch for many years.

PARIS LETTER.

Honors Paid to Professor Brouardel.

Professor Brouardel, who was replaced last year by Professor Debove as dean of the faculty, was recently made a grand officer of the Legion of Honor, and on this occasion a fitting tribute was paid to Brouardel's work as professor of legal medicine. The ceremony took place in the large amphitheater of the Faculty of Medicine, and the minister of public instruction, Chaumié, was present, as well as Liard, the vice-rector of the academy, and other high dignitaries of the university. Professor Gilbert, a pupil of Brouardel, made a speech, in which he showed how Professor Brouardel had always sacrificed his private interests for the general welfare, giving up his laboratory work, his practice and his hours of rest or recreation when his professional duties required his doing so. Dr. Marey, a member of the institute, who is so well known for his work on physiology, had written a speech which was read by Chauveau, as he was ill at the time. Dr. Debove also made a speech in which he made the remark that he trusted his successors would leave the deanship with as much affection and sympathy shown by their pupils and colleagues, which reminds one that Dr. Debove has not been in great favor with the students of the Paris Faculty. The minister, Chaumié, spoke of Brouardel's recent efforts in the campaign against tuberculosis.

Terrier's Statistics in Appendicitis.

Almost all the important surgeons in Paris are publishing their statistics on appendicitis at the weekly meetings of the Society of Surgery. Professor Terrier has been one of the last to do this. His statistics include three years' work at La Pitié, 1900-1901-1902. He divides operations into three categories: urgency operations, operations "*à chaud*," operations "*à froid*." Thirty-nine urgency operations furnished four deaths, or 10.25 per cent. mortality. The second type of operation was performed 17 times with one death, or 5.88 per cent. mortality. Of the last variety there were 61, with one death, or 1.80 per cent. The grand total is 117 operations with 6 deaths, or 5.12 per cent. mortality.

Cure of Gin Liver by the Internal Use of a Hog's Liver.

At a recent meeting of the Medical Society of the Hospitals, Dr. Galliard reported the case of a woman, 54 years old, who was suffering from cirrhosis of the liver. Various drugs were tried without effect, and, at last, she was given daily 150 grams of the liver of a pig. The urine soon became clearer and more abundant, the symptoms improved, and now she seems to be quite cured.

Faure's Second Operation for Cancer of the Esophagus.

Dr. Faure, surgeon at the Hotel Dieu, had already operated last December, on a case of cancer of the thoracic portion of the esophagus, and the patient died the next day. In a second case, which was operated on recently, Dr. Faure did not excise the first rib as before, but was able to remove a part of the esophagus eight centimeters long. The operation was done in both cases on the right side, though Drs. Quenu and Hartmann consider it best to operate from the left side on account of the pleural sinus. The latter was not, however, in the way, whereas on the left side the aorta might render the operation more difficult.

Hydrocele Containing Tuberculous Bacilli.

At a recent meeting of the Society of Surgery, Dr. Tuffier presented two patients who had been treated for simple hydrocele and who showed no trace of genital tuberculosis. The effusion had been treated by Jousset's method of centrifuging and had been found to contain tuberculous bacilli, which would tend to show that in a certain number of cases hydrocele was of tuberculous origin.

Infantile Scurvy.

At a recent meeting of the Obstetrical Society, Dr. de Rothschild reported the recent statistics of infantile scurvy, which show that this affection is exceedingly rare in France, there being only 23 cases reported. It is, however, frequently seen in Germany, Baginski coming across 8 or 10 cases yearly. The latter author has ever cited instances where the child was fed from the breast. Professor Budin, the great advocate of feeding with sterilized milk, said he had never seen a single case of the disease and, as he uses sterilized milk, he feels that it must have some other etiology. In connection with this it may be stated that at a recent meeting of one of the medical societies of Paris a certain variety of sterilized milk was spoken of as having been given to a child suffering from scurvy. It is a noteworthy fact that in the reports that appeared in the medical papers no mention was made of the name, the milk being spoken of as sterilized milk.

Correspondence.

The Diploma vs. Examination.

PEORIA, ILL., Feb. 23, 1903.

To the Editor:—Your remarks in your issue of February 21 under the caption "The Diploma vs. Examination" lead me to a desire to know your reasons for the position therein taken. The question involved is a particularly vital one at the present stage of legislative effort on the part of the profession of the state of Illinois, and a goodly number, including myself, entertain views diametrically opposed to those you have expressed. If the judgment of such is erroneous, I for one should like to have it corrected by efficient arguments. The action of a majority of our state or territorial legislatures is not alone conclusive, in that a particularly active coterie of medical men may, as we have had reason to know, secure legislation not representative of the sentiments of the profession as a whole.

I can not conceive of the likelihood of procuring, under existing political conditions in and out of the profession, a central examining board so constituted as to secure, in the time and with the opportunities ever at its disposal, a superiorly adequate knowledge of any individual's fitness for the practice of medicine. If the possession of a diploma is to be considered a prerequisite to examination, either as an excuse for laxity or a safeguard against omissions, it seems to me a confession of weakness of the whole cumbersome scheme of a central examining board and its associate committees. In my judgment it were far easier and more practicable, and more in harmony with the economic and centralizing spirit of the time, for a small number to authoritatively investigate and pass on the educational merits of fifty or one hundred institutions of learning, occasionally, than to adopt the task of perpetually investigating the qualifications of thousands of individuals. Instructors, or even some special individual appointed for the purpose, must, it seems to me, be acknowledged to be in a better position, through constant association with students and their course of work, to judge of their all-around fitness than can be any company of individuals armed with a mere series of stock questions entirely unassociated with any opportunity for their practical application. O. B. WILL.

Ἀχιλλέυς ἀνέστη Χωόμενος.
Achilles Rose in His Wrath.

BROOKLYN, Feb. 25, 1903.

To the Editor:—In THE JOURNAL of February 14 there appeared a letter from one, Achilles Rose, M.D., who seems to have a grievance of some kind. Our attention has just been called to his amusing invective. The editors of the *Medical Library and Historical Journal* doubtless would have qualified as "men of learning" if only the journal had been published in modern Greek. This "monstrosity" might then have seemed

as sweet as "A Rose of Yesterday." Alas! we are not "men of learning," and we do not claim to be—we are only men who are learning. There is only one man of learning, only one—and he will not quote titles of books "because many of these titles are misspelled." We are desolate. We once knew of a woman who never married because some men are bad. All mankind grieved.

The writer acknowledges the justness of the criticism of Achilles Rose, M.D., as to there being some misspelled titles in the 17-page list of "New Medical Publications" published in the initial number of the *Journal*. Typographical errors will creep in, and in this instance circumstances, unfortunately, prevented this list from receiving the careful revision the editors will be able to give it in the future. Then, if the eyes of "The Great Corrector" perchance ever again should see this "monstrosity" perhaps his grief will be somewhat assuaged.

We like just criticism and take it kindly. We solicit it. Criticism is the index finger pointing to progress. Thank God, we have not the slightest idea that we have reached a state of perfection.

The Medical Library and Historical Journal,
ALBERT T. HUNTINGTON, Editor.

Registrations at the Madrid Congress.

The following circular letter is self-explanatory:

CINCINNATI, Feb. 24, 1903.

Dear Doctor:—Some time last year I received a lot of application blanks from the secretary of the International Medical Congress of Madrid, and, in turn, forwarded them to the members of the A. A. O. G., requesting such as desired to fill out the same and return them, with the admission fee of $6. I received in return a number of applications, with checks, etc., and forwarded them to Madrid, with the request that the registration tickets be forwarded direct to the subscribers. I heard nothing more of the matter, and entirely overlooked the fact that I failed to receive my own admission ticket, until I received, to-day, advice as follows:

> Your very gracious letter, enclosing 126 pesetas, was duly received. I am, however, full of humiliation to advise you that the accompanying applications were mislaid. We have tried to find them, but, at the last moment, forced to abandon the effort. If you will be so kind as to again forward the names, the certificates will be made out at once.

I have no memorandum of those who subscribed, and write to ask whether or not you sent your subscription to me. If so, kindly advise me, and I will at once forward the information to Madrid.

Please let me hear from you by return mail.

Very sincerely yours,
CHAS. A. L. REED.

Anti-Infectious Action of Crede's Collargol.

To the Editor:—In your issue of December 20 I notice with much surprise and regret an editorial, "Anti-Infectious Action of Credé's Collargol," in which the statement is made that, because the bacteriologic investigations of Cohn in Pfeiffer's laboratory (Königsberg) have given negative results, and because 15 minutes after introduction into the circulation colloid silver is no longer demonstrable in the blood, its fate as a specific against sepsis is settled.

It seems that you expect from collargolum a powerful bactericide effect, as from sublimate or nitrate of silver; if it possessed an action of this character, it could never be introduced so freely into the system. As, however, Professor Wright (director of the Groningen University Medical [illegible] states, collargolum is a powerful catalysator in the [illegible] and hence can only enhance the normal bactericide properties of the blood.

[illegible]iologic experiments are incompetent to determine the [illegible] or inefficacy of collargolum, since its action is only de[illegible] in the body, and in the presence of pathogenic bacteria [illegible] toxins, with which it forms combinations, while in [illegible]lood or lymph it remains metallic silver.

I am sorry that in this editorial you have brushed aside the clinical testimony of such men as Professors Roswell Park, A. Jacoby, S. Marx, Chas. G. Cumston, H. J. Boldt, Dieckerhoff, Tillmanns, Walter B. Dorsett, George M. Coon, Forchheimer, Drs. Gustav Schirmer, Oscar Werler, and many others, whose reports you will find in our pamphlets of March, 1899; March, 1900; October, 1900; March, 1901; October, 1901; March, 1902, and October, 1902, which we send you by this mail, separately. I do not remember having ever seen a single clinical report "denying all claims of efficacy" for collargolum; if such have been published their number is utterly insignificant to that of the favorable ones. Your very truly, C. F. STEIFEL.

A Sample Health Board Propaganda.

DETROIT, MICH., Feb. 28, 1903.

To the Editor:—I accepted the appointment as a member of the Detroit Board of Health from Governor Pingree, Feb. 21, 1899, for the term ending Feb. 28, 1903.

On March 15, 1899, certain thoughts of mine appeared in the *Detroit Evening News* concerning the workings of the Detroit Health Department, and the kind of man needed as health officer. These thoughts later became my convictions, and were contained in my fixed policy, and were, viz.:

(*a*) Health officer to be a clinical physician with executive ability, and to have had personal experience diagnosing contagious diseases, including smallpox, scarlet fever and diphtheria.

(*b*) Health officer to examine *personally* suspicious or doubtful cases reported to the department, and meet *personally* private physicians asking consultation thereon.

(*c*) Health office to be operated on practical business principles, and without political coloring.

(*d*) Methods of health office to be up-to-date, but for every dollar of cost of maintenance the department to obtain full value in practical results—all unnecessary expense to be eliminated.

(*e*) All health department work of a medical nature to be performed by the salaried physician employes of the city.

(*f*) Health officer and all employes to give their entire time to the department. Under no circumstances should persons on regular salary be paid extra compensation.

Spencer says: "Political life is healthy only in proportion as it is conscientious." I have endeavored faithfully to enforce the above policy, as well as all health laws and ordinances applicable to Detroit, with what success the official records of the Detroit Board of Health will show.

JOHN L. IRWIN, M.D.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

MEDICAL PRACTICE QUERIES.

GRAND RAPIDS, MICH., Feb. 27, 1903.

To the Editor:—I am a graduate of a recognized medical college and am registered in Michigan. I wish to move to California. I understand that there is reciprocity between Illinois and California and between Michigan and Illinois. Is this true? Now, would it be allowable for me to register in Illinois and from there register in California? If not, what will I have to do to practice in California? Kindly answer in your "Queries." J. S. RANDALL.

ANS.—Illinois reciprocates on certain conditions with Michigan, but not with California yet. An examination will probably be required in California.

JOHNSON CREEK, WIS., March 2, 1903.

To the Editor:—Kindly let me know through the Queries and Minor Notes department of THE JOURNAL which state boards of medical examiners reciprocate and on what basis? MICH.

ANS.—Delaware reciprocates with New Jersey and Maryland; Illinois with Indiana, Maine, Michigan, New Jersey and Wisconsin; Indiana with Michigan, Wisconsin and Illinois; New Jersey with Delaware, Maine and Illinois; Maine with Illinois and New Jersey.

Some states accept certificates of certain others—thus Pennsylvania accepts those of New York, and Texas those of some twenty other states—Delaware, District of Columbia, Georgia, Iowa, Louisiana, Maryland, Mississippi, Missouri (if issued after July, 1901), Montana, Nevada, New Hampshire, New Jersey, New York, North Carolina, Oregon, Pennsylvania, South Carolina, Utah, Virginia, Washington.

Marriages.

JOHN J. ZAUM, M.D., to Miss Gertrude Anderton, both of Milwaukee, Wis., February 24.

ISAAC A. THOMPSON, M.D., to Miss Alma M. Despres, both of Traverse City, Mich., February 25.

JOSEPH A. GUERTIN, M.D., St. Mary, Ill., to Miss Amy Grossaint of L'Erable, Ill., February 18.

JOHN G. MCKINNEY, M.D., Barry, Ill., to Mrs. Electa Henry of El Dara, Pike County, February 18.

JAMES W. BLAN, M.D., La Fayette, Ill., to Miss M. Mollie Goehring of Warsaw, Ill., February 18.

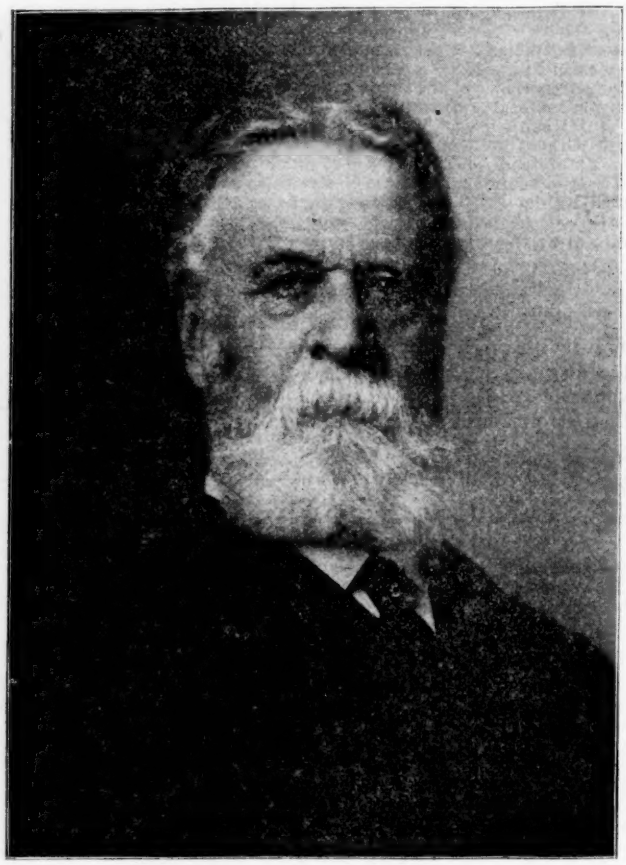
ROBERT STANLEY GOODMAN, M.D., Oakhill, Fluvanna County, Va., to Miss Mary Dixon Boggs, of Baltimore, February 17.

RICHARD M. FLETCHER, JR., M.D., acting assistant surgeon, U. S. A., to Miss Anna Ford Ludlow of Chicago, February 12.

Deaths.

T. Gaillard Thomas, M.D.

Theodore Gaillard Thomas, M.D., of New York City, died in Thomasville, Ga., February 28, aged 71. Dr. Thomas was one of the pioneers in American gynecology; as a teacher and



T. GAILLARD THOMAS, M.D.

clinician he was unsurpassed in his day; his courtesy and kindness of heart endeared him to the thousands of students whom he instructed, and to his brothers in the profession, and his sympathy and chivalrous tenderness endeared him to his patients.

Theodore Gaillard Thomas was born at Edisto Island, S. C., November 21, 1831. His early education was received in Charleston (S. C.) College, which he left in his senior year to enter the Medical College of the State of South Carolina, Charleston, from which he was graduated in 1852. He settled in New York City immediately after graduation and was resident physician at Bellevue Hospital, and New York City Hospital, Blackwell's Island. He soon devoted his attention especially to obstetrics and diseases of women. He was for many years professor of obstetrics and diseases of women and children in the College of Physicians and Surgeons, New York; physician to Bellevue Hospital; surgeon to the Woman's Hospital in the State of New York; consulting surgeon to Nursery and Child's, French Lying-In, Skin and Cancer, Presbyterian, and St. Mary's hospitals. He was also at one time physician to Bellevue, St. Luke's, Roosevelt and the Strangers' hospitals.

He was a member of the American Medical Association; a founder, and in 1891, honorary fellow of the American Gynecological Society; a member and once president of the New York Obstetrical Society; a member of the New York State Medical Association, New York Academy of Medicine, New York County Medical Society, and New York Pathological Society; honorary fellow of the Obstetrical Society of London; corresponding fellow of the obstetrical societies of Berlin, Philadelphia and Louisville.

His work entitled "Diseases of Women" has been for many years a standard text-book.

His funeral was held in New York City, March 3, and was largely attended. Members of medical societies of which he was a member, hospital staffs on which he had served and the faculty of the College of Physicians and Surgeons were present in great numbers to pay the last honors to their deceased colleague.

W. E. B. Davis, M.D.—The later reports are still indefinite as to the manner in which Dr. Davis met his death. One account says that he got out of his buggy to go to his horse's head, when the animal reared, throwing him under the wheels of the train; another, that he lost his footing and fell under the train; another, that he did not take hold of the horse's bridle, but threw himself under the train; a fourth, that he was drawn under the moving train by the suction, and a fifth, that as he was about to sieze his horse's bridle he was struck by the step of the coach and thrown under the train. The wheels of the rear truck passed over his body just above the hips, not breaking the skin. His right leg was broken and his face showed abrasions.

The body lay in state at his late residence for six hours on February 26, and hundreds took advantage of the opportunity to look on his face for the last time. The funeral ceremonies were marked by the simplicity which was characteristic of the deceased.

The *Age-Herald*, in an editorial mention of Dr. Davis' death, says: "He held not only a high place among the surgeons of this state, but he was widely known in other states. It may be said that he was esteemed by eminent surgeons throughout this country, and even in other countries. Here at home those to whom his skill and deep knowledge of the human frame had come are inconsolable, and in their homes the loss will be grievously felt. He was as tender-hearted as he was skilful, as genial and lovable as he was helpful and scientific. He was loved as a man and respected as a great surgeon. The loss of this people is heavy, and the grief of those to whom he was a companion and friend is beyond the power of words to express."

The newspaper also states: "The scenes at the infirmary were deeply pathetic. The white-capped nurses went quietly about their hospital duties, but in the atmosphere was the appalling hush of death. These good women would pass each other in the long, silent corridors, but their lips were mute. They passed in and out of the sick chambers and carried out to the minutest detail the instructions left by the physician whose end came so suddenly. Every white bed had its sufferer looking for relief to a life that had just gone out. They watched and waited the long afternoon and grew restless at the delay. And yet never a word of the tragedy came from the lips of the white-capped nurses, never a hint of the accident that was being discussed in the streets, at the clubs, in thousands of homes, in the most fashionable avenues and in the poorest districts of the city."

Franklin M. Kemp, M.D. Long Island College Hospital, Brooklyn, 1893, died from heart disease at Nueva Caceres, Philippine Islands, February 23. After his graduation Dr. Kemp served as assistant surgeon in the Soldiers' Home, Dayton, Ohio, and in 1896 was appointed first lieutenant and assistant surgeon in the Army. He served in Vancouver Barracks and Alaska, and in 1898 went to Manila, where he served under General Lawton, and twice was mentioned in despatches for bravery. He was invalided home in 1899, and was on duty at the United States Military Academy, West Point. He was made captain and assistant surgeon in 1901, and ordered back to the Philippines. He was a member of the Association of Military Surgeons of the United States.

Cochran **McClelland, M.D.** Jefferson Medical College, Philadelphia, 1873, formerly assistant to Prof. Ellerslie Wallace, a well-known gynecologist and obstetrician of Philadelphia, and a member of the American Medical Association, and the Philadelphia County Medical Society, died at his home in Philadelphia, February 16, from pneumonia, after an illness of two weeks, aged 58.

Caird **Ryerson Maclean, M.D.** Faculty of Medicine of Queen's University and Royal College of Physicians and Surgeons, Kingston, Ont., 1859; M.R.C.S. Eng., 1879, surgeon-lieutenant-colonel, a veteran of the Civil War, through which he served as surgeon, died at his home in Meaford, Ont., February 17, from paralysis, after a long illness, aged 65.

David **Miller Anderson, M.D.** Bellevue Hospital Medical College, New York, 1866, assistant surgeon in the Civil War, and three times a member of the Pennsylvania legislature, died at his home in Venetia, February 16, from pleuro-pneumonia, after an illness of two weeks, aged 65.

Robert **Rose Dorsey, M.D.** University of Pennsylvania, Philadelphia, 1882, fourth of his family in linear descent to practice medicine, died from consumption at his home in Los Angeles, Cal., February 18, from consumption, aged 43.

A. L. Cressler, M.D. Jefferson Medical College, Philadelphia, a member of the legislature in 1874, and a charter member of the Luzerne County Medical Society, died at his home in Wilkesbarre, Pa., February 23, aged 75.

Thomas Atkinson Councell, M.D. College of Physicians and Surgeons, Baltimore, 1894, of Easton, Md., health officer of Talbot County, died at the City Hospital, Baltimore, from Bright's disease, February 18, aged 30.

James E. Ferguson, M.D. Philadelphia Medical College, 1852; Jefferson Medical College, Philadelphia, 1870, twice a member of the state legislature, died February 16, at his home in Bangor, Mich., aged 78.

Ingham Wood Donnan, M.D. Bellevue Hospital Medical College, New York, 1871, of South Side, Pittsburg, Pa., died from consumption at Aiken, S. C., February 13, after a long illness, aged 58.

Peter V. R. Dafoe, M.D. University of the Victoria College, Cobourg, Ont., 1864, of Tecumseh, Neb., died from consumption, February 17, near Macon, Mo., while returning home from Florida, aged 64.

Edward E. Baker, M.D. Medical School of Maine, Bowdoin College, Brunswick, 1887, of Friendship, Maine, died recently from consumption at Jefferson, Maine, after an illness of three years.

David A. Kappes, M.D. Jefferson Medical College, Philadelphia, 1884, a specialist on diseases of the eye, died from pneumonia at his home in Philadelphia, February 14.

John J. Conway, M.D. Long Island College Hospital, Brooklyn, 1880, died from pneumonia at his home in Brooklyn, after an illness of one week, February 13, aged 44.

Benjamin Bevan, M.D. New York University, 1890, died at his home in West Pittston, Pa., February 20, from myelitis, resulting from a fall, after a long illness, aged 41.

Martin B. Cherrie, M.D. Rush Medical College, Chicago, 1888, died at his home in Ankeny, Iowa, February 20, from consumption, after an illness of nearly four years.

Charles C. Conway, M.D. Washington University School of Medicine, Baltimore, 1869, died at his home in Orange County, Va., February 17, after a long illness, aged 70.

Alice H. Burdick, M.D. Eclectic Medical College of the City of New York, 1872, was struck by a train and instantly killed at Passaic, N. J., February 19, aged 60.

Carlos R. Allen, M.D. Dartmouth Medical College, Hanover, N. H., 1838, the oldest practitioner in Sussex County, Va., died at his home in Vernon, February 19, aged 88.

William J. Springfield, M.D. Cleveland College of Physicians and Surgeons, 1874, died recently from pneumonia at his home in Jolly, Daviess County, Ky.

Henry Addison Mandeville, M.D. College of Physicians and Surgeons, New York, 1891, died at his home in South Orange, N. J., January 31, aged 45.

D. Erastus Thomas, M.D. Medical College of Evansville, Ind., 1851, of Lacon, Ill., died at St. Petersburg, Fla., from heart disease, February 5, aged 78.

Pacificus B. Porter, M.D. Chicago Medical College, 1869, of Chicago, died suddenly in a drug store in Ravenswood, February 9, from heart disease, aged 57.

Elizabeth McFarland, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1901, died at Sharon, Pa., from broncho-pneumonia, February 7.

Henry Helfrich, M.D., a retired homeopathic physician of Allentown, Pa., died at his home in that city, February 1, from pneumonia, aged 99.

Benjamin R. Dostor, M.D. Jefferson Medical College, Philadelphia, 1858, died at his residence in Blakely, Ga., February 15, from Bright's disease.

William W. Wilkes, M.D. Louisville Medical College, 1871, died at his home in Waco, Texas, January 29, after an illness of several weeks, aged 56.

William Y. Howard, M.D. University of Louisville, Ky., 1888, died from hemorrhage of the stomach at his home in Louisville, February 2.

Hiram W. Alexander, M.D. University of Nashville (Tenn.), 1857, died at his home in Muir, Fayette County, Ky., February 24, aged 73.

Robert W. Norwood, M.D. University of Tennessee, Nashville, 1894, died at his home in West Nashville, Tenn., January 26, aged 43.

Jonas Watkins, M.D., an eclectic physician of Blanchester, Ohio, died at his home in that city, February 3, from apoplexy, aged 74.

John Tatman, M.D. Indiana Medical College, La Porte, Ind., 1840, died at his home in Mitchell, S.D., February 2, aged 85.

Bishop B. Sudworth, M.D. University of Michigan, Ann Arbor, 1883, died at his home in Ann Arbor, February 15, aged 73.

Herman S. Bissey, M.D. University of Pennsylvania, Philadelphia, 1880, died at his residence in Philadelphia, February 22.

Tousley B. Lewis, M.D. University of Buffalo, 1879, died at his residence in New York City, February 8.

Isaac Sanders, M.D., died at his home in Fordsville, Ky., January 29.

Book Notices.

THE WORK OF THE DIGESTIVE GLANDS. Lectures by Professor J. P. Pawlow. Director of the Physiological Department of the Institute for Experimental Medicine. Translated into English by W. H. Thompson, M.D., M.Ch., F.R.C.S. (Eng.). King's Professor of the Institute of Medicine, Trinity College, Dublin. Illustrated. Cloth. Pp. 196. Price, $2.00. London: Charles Griffin & Co., Ltd. Philadelphia: J. B. Lippincott Co. 1902.

This is a translation of the lectures delivered by Professor Pawlow before a gathering of medical men in the St. Petersburg Institute for Experimental Medicine, before the Russian Medical Academy, etc. Since his audience was made up of men who were not supposed to know of the methods or results of his experimental work, he presented his facts in the simplest language, so that the least learned could understand; at least this is the opinion one would get from reading the English translation. It is barely possible that the translator should have credit for a part of this. In any event, even the ordinary intelligent layman will find the book intelligible, but, above all, easily readable and almost fascinating. The lectures give an account of Pawlow's great work in his physiologic laboratory connected with the St. Petersburg Institute for Experimental Medicine and of the splendid results achieved. We commend these lectures to every physician, whether he is interested in experimental medicine or not. It can not but stimulate every one who reads the book. The general reader will find in it food for thought and, at the same time, relaxation. It is a pity that the American publishers have given us a reprint of the English edition, which is in small type. The matter is deserving of, and the reader is entitled to, a larger type, especially at the price charged.

THE PRACTICAL MEDICINE SERIES OF YEAR-BOOKS. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Issued Monthly. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume III. The Eye, Ear, Nose and Throat. Edited by Casey A. Wood, C.M., M.D., Albert H. Andrews, M.D., and T. Melville Hardie, A.M., M.D. December, 1902. Cloth. Price, $1.50. Chicago: The Year-Book Publishers.

This small book contains a good collection of articles, mostly abstracts, which are very interesting and instructive reading.

One of the subjects in the chapter on nose and throat of special interest to a considerable number of physicians, is the effect of the suprarenal solution on the mucous membranes. Some writers claim it is of value as an anesthetic and of little value as a hemostatic, while others claim the opposite effect. One case is reported of a severe hemorrhage in a case of hemophilia which was controlled in thirty-six hours. Vansant claims that if the solution is applied by means of cotton wool, the usual anesthetic effect of cocain is increased and prolonged and is equivalent to that produced by a strong solution of cocain. This is due, Oppenheimer says, to the prevention of hemorrhage and the consequent loss of cocain from the tissues. It is also claimed that this temporary anemia retards healing and causes excessive sloughing of tissue following operation. We have noticed that the adrenalin apparently prolonged the anesthetic effects of cocain, but we doubt the correctness of the observation about sloughing.

HUMAN ANATOMY. A Complete Systematic Treatise by Various Authors, Including a Special Section on Surgical and Topographical Anatomy. Edited by Henry Morris, M.A., and M.B. Lond., F.R.C.S. Eng., Member of the Council (Lately Vice-President) of the Royal College of Surgeons of England. Illustrated by 846 Wood Cuts, the Greater Part of Which Are Original and Made Expressly for This Work by Special Artists, 266 Printed in Colors. Third Edition, Revised and Enlarged. Cloth. Pp. 1328. Price, $6.00. Philadelphia: P. Blakiston's Son & Co. 1902.

It might seem on first thought that the frequent revision of a work on such an apparently fixed subject as anatomy would not be required, but such is not the case. Not only are many new points in the finer anatomy constantly coming out, but our comprehension of the meaning of many anatomic facts change with increasing knowledge of embryology, comparative anatomy, etc. Methods of teaching also undergo changes, so that it is as essential that a work on anatomy, in order to be modern, should be subjected to revision almost as frequently as text-books on other subjects. In this, the third edition, we notice many changes, noticeably the addition of a number of new illustrations, both colored and diagrammatic, which facilitate materially the study of this, to students, usually dry subject. The sections on surgical and topographic anatomy and on vestigial and abnormal structures are particularly interesting and instructive to the practitioner as well as the student. The matter is well arranged, and the whole work one of the best on the subject.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Assisted by H. R. M. Landis, M.D., Assistant Physician to the Out-Patient Medical Department of the Jefferson Medical College Hospital. Volume IV. December, 1902. Diseases of Digestive Tract and Allied Organs; Liver, Pancreas and Peritoneum—Anesthetics, Fractures, Dislocations, Amputations, Surgery of the Extremities, and Orthopedics—Genito-urinary Diseases—Diseases of the Kidneys—Physiology—Hygiene—Practical Therapeutic Referendum. Cloth. Pp. 422. Price, $1.50. Philadelphia and New York: Lea Brothers & Co. 1902.

This work, which is really a serial in book form, contains in the present issue a digest of medical science under the heads given above. Each of these chapters is written by a known expert. The first is by Dr. Max Einhorn, whose authority no one will question; the second, on anesthetics and operative surgery, is by Dr. J. C. Bloodgood; that on genito-urinary diseases by Dr. William T. Belfield; the chapter on diseases of the kidneys is by Dr. John Rose Bradford, F.R.C.P.; a summary of the physiology is made by Dr. Albert P. Brubaker; hygiene is treated by Dr. Charles Harrington; the therapeutics section by Dr. E. Q. Thornton. The book, with its other quarterly issued volumes, is an epitome of medical progress which, we think, few physicians can afford to be without.

APPLIED SURGICAL ANATOMY Regionally Presented for the Use of Students and Practitioners of Medicine. By George Woolsey, A.B., M.D., Professor of Anatomy and Clinical Surgery in the Cornell University Medical College. With 125 Illustrations, Mostly Colored. Cloth. Pp. 521. Price, $5.00. New York and Philadelphia: Lea Brothers & Co. 1902.

The practitioner soon learns to distinguish between the descriptive anatomy of the text-book and the practical or applied anatomy of the operating room and the bedside. Not that there is any difference in the anatomy, but the practical application of anatomic points in medical and surgical cases is a study in itself. The author appreciates thoroughly this fact, and it has been his aim to bring before the practitioner applied anatomy in a practical, interesting and instructive manner. We may add, too, that he has succeeded exceedingly well, for the work is replete with useful and valuable facts and suggestions. There are a number of minor defects and errors, such, for instance, as the promiscuous use of inches and centimeters in measurements; the statement that the cranial bones never reproduce lost portions; that the speech center in right-handed persons is on the right side, etc., but these can easily be corrected in future editions, and should not be allowed to detract from the worth of the book. It is well worth careful study, and can be recommended.

ATLAS AND EPITOME OF DISEASES OF THE MOUTH, PHARYNX, AND NOSE. By Dr. L. Grunwald, of Munich. From the Second Revised and Enlarged German Edition. Edited, with Additions, by James E. Newcomb, M.D., Instructor in Laryngology, Cornell University Medical School. With 102 Illustrations on 42 Colored Lithographic Plates and 41 Text-cuts. Cloth. Pp. 219. Price, $3.00 net. Philadelphia and London: W. B. Saunders & Co. 1903.

This is a small octavo volume, one-half of which is devoted to colored plates of the various lesions of the mouth, pharynx, nasopharynx and nose, with descriptive text, and 212 pages which also contain numerous illustrations. It is devoted largely to the special pathology and treatment of the more important classes of diseases involving these organs. The book is concise and well written, and will be a boon to many of the younger specialists and to physicians who are not thoroughly familiar with the diseases of these organs. The author may be heartily congratulated on the excellence of his work and the translator on having furnished a valuable addition for the libraries of Americans who are not thoroughly familiar with German.

TASCHENBUCH DER MASSAGE. Für Studirende und Aerzte. Von Dr. Erich Ekgren an der III medicinischen Universitätsklinik zu Berlin. Mit einem Vorwort von Geh. Med.-Rath Prof. Dr. H. Senator. Mit 11 Abbildungen. Cloth. Pp. 90. Berlin: S. Karger. 1903.

This is perhaps the most concise little manual for the physician that we have seen. Of course, to those who do not understand German its usefulness would be very limited, though the illustrations are numerous and helpful. The author has condensed in less than 100 pages a large amount of instruction, and it seems to us there ought to be many physicians who can make use of the book. It has an advantage, not so common in many works of its size, of a convenient little index, and contains a list of the latest literature, which is, of course, as given in a German work, almost exclusively German.

BACTERIOLOGICAL TECHNIQUE. A Laboratory Guide for the Medical, Dental, and Technical Student. By J. W. H. Eyre, M.D., F.R.S. Edin., Bacteriologist to Guy's Hospital. With 170 Illustrations. Cloth. Pp. 375. Price, $2.50 net. Philadelphia and London: W. B. Saunders & Co. 1902.

This work is intended as a guide to the medical student in bacteriology and is fairly well suited for its purpose. There is hardly any book that we can well compare to it, except perhaps that of Novy, which is one or two years behind it in point of publication.

Miscellany.

THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH.

A Statement of Work and Plans.

The Rockefeller Institute for Medical Research was founded in 1901 by Mr. John D. Rockefeller, who gave for this purpose the sum of $200,000. The aims of the institute are the promotion of medical research, with special reference to the prevention and treatment of disease.

It was thought wise by the directors of the institute not, at first, to concentrate the work in any one locality, but to enlist the interest and co-operation of such investigators throughout the country as might be engaged in promising researches or who might enter on new fields if suitable pecuniary assistance could be afforded them. It was the conviction of the directors that in this way it would be possible not only to stimulate and foster valuable contributions to science, but also to secure important practical suggestions as

to the lines along which the institute might most wisely develop.

Among the large number of applications for assistance in carrying on original studies which relate to the cause, prevention and cure of disease and to the problems on which new knowledge on these subjects must be based, over twenty have been selected. The directors have secured counsel in these selections from the heads of departments or others in the universities of Harvard, Yale, Johns Hopkins, Pennsylvania, Columbia, New York, Chicago, Michigan, McGill, Wesleyan, California and Western Reserve, and in many of these institutions work has been prosecuted. Two of the Rockefeller fellows have been working in Europe. Some of the workers under these Rockefeller Institute grants, which vary in amount from $200 to $1,500, have completed and published their investigations; some are still engaged on them.

It is the purpose of the directors from time to time to bring together, in the form of volumes of collected reprints, the results of these researches, which may be published in various technical journals. An arrangement has been effected by which the institute will assume the publication of the *Journal of Experimental Medicine*, which will remain under the editorial supervision of Dr. William H. Welch, professor of pathology in the Johns Hopkins University, and president of the board of directors of the institute.

At the end of the first year of practical work of careful study of the situation, it became clear to the directors that existing institutions in this country, while in many instances carrying on most valuable researches in medicine, do not afford adequate facilities for many phases of investigation which are of the utmost importance and urgency. This is, in part, due to the lack of sufficient endowment, in part to the large demands made on the time and energy of the workers by their duties as teachers. It was further evident that such assistance as the institute had thus far been enabled to extend to selected investigators in various parts of the country had fostered work of great actual value as well as of high promise and should be perpetuated along similar lines.

The directors, however, were united in the conviction that the highest aims of the institute could not be secured in this way alone. Useful as such individual studies are, and important as it is to enlist and to maintain the interest of research workers in established institutions of learning, it is not possible in this way to secure the unity of aim and the co-ordination and mutual stimulus and support which are essential to the highest achievements in research. These are to be secured, it was believed, only by the centralization of certain lines at least of the work of the institute under a competent head or series of heads of departments, in a fixed place, with adequate equipment and permanent endowment.

There is no lack of men of sufficient training and experience ready to devote their lives to the solution of medical problems which bear directly or indirectly on the welfare of mankind. The widely open fields of research are many. Some of these relate to the application of existing knowledge to the prevention and cure of disease; others to the development of new knowledge along various lines of science, which, more than ever before, give promise of great significance in the problems of physical life.

In a broad sense, the directions and methods for the study of disease may be classified as morphologic, physiologic and chemical, and the institute, it was thought, should include departments providing for these divisions of the subject. For the morphologic study of disease there should be a complete equipment for pathologic-anatomic research. For the physiologic study of disease provision should be made for experimental pathology, for pharmacology and therapeutics, for the study of bacteria and other micro-organisms, with special reference to their relation to the infectious diseases, and for other investigations in personal and public hygiene, including preventive medicine. Here belong, especially, the problems of infection and immunity, and here also, in large part, such studies as require access to patients in hospitals. There should be a laboratory, well-equipped for investigations in physiologic and pathologic chemistry.

It was the conviction of the directors that such an institute might wisely add to its aims in the direct increase of the knowledge of disease and its prevention and cure, a phase of activity which should look toward the education of the people in the ways of healthful living, by popular lectures, by hygienic museums, by the diffusion of suitable literature, etc. For, in fact, the existing agencies for medical research for the most part stop short of those direct and widely diffused applications of newly won knowledge, on which the immediate practical fruitage of their work so largely depends.

In order that the causes and treatment of human disease may be studied to the best advantage, it was the opinion of the directors that there should be attached to the institute a hospital for the investigation of special groups of cases of disease. This hospital should be modern and fully equipped, but it need not be large. It should attempt to provide only for selected cases of disease, and the patients would thus secure the advantages of special and skilled attendance and such curative agencies as the institute might develop or foster.

It was thought that an institute for medical research of the largest promise would require a central institution, fully equipped and endowed, and with capacity for growth, in which the more comprehensive studies demanding the co-ordinated forces of various phases of science could be carried on from year to year; while, at the same time, by means of such grants of assistance as had been offered during the initial year, it should continue to make available the resources of special workers all over the country, as well as in Europe.

In view of the above considerations relating to its future, in June, 1902, Mr. Rockefeller gave to the institute the sum of $1,000,000 for the purchase of suitable land, the erection of buildings, and the organization of a working force along the broader lines which had been projected. It is the purpose of the directors to proceed at once to the erection of a laboratory building which will provide for the present requirements and will be capable of enlargement as the character and extent of the work of the institute may develop. Negotiations for a suitable plot are now under way.

A small hospital will also be built in the immediate future, which will be maintained in close association with the experimental work of the institute.

Provision will be made in the laboratory building for research in physiologic chemistry, pharmacology and therapeutics; in normal and pathologic physiology, and in various phases of morphology, and for the study of bacteria and other micro-organisms. It is hoped that the laboratory buildings may be completed and ready for the commencement of work in the autumn of 1904.

Dr. Simon Flexner, professor of pathology in the University of Pennsylvania, will direct the scientific work when the building is completed. His colleagues deem it of the highest importance that the institute has been able to secure so eminent an investigator as Dr. Flexner to shape the work of its early years. Dr. Flexner will spend several months abroad while the new buildings are in course of erection.

It is proposed to organize the various sections and departments into which the work of the institute will naturally fall so that each of them, though in a measure autonomous, will still be so closely associated as to favor the conjoint investigation of comprehensive problems. Associated with the head of each of these departments it is proposed to have a staff of trained assistants.

Provision will also be made for research work by a group of trained men, to be designated fellows, scholars, etc., of the institute, under pecuniary grants of varying amounts.

Finally, opportunity will be afforded to suitable investigators not members of the regular staff of the institute to pursue special lines of research.

The directors of the institute are: Drs. William H. Welch of Baltimore, Theobald Smith of Boston, Simon Flexner of Philadelphia, and Drs. Hermann M. Biggs, C. A. Herter, L. Emmett Holt, and T. Mitchell Prudden of New York.

The officers are: Dr. William H. Welch, president; Dr. T. Mitchell Prudden, vice-president; Dr. L. Emmett Holt, secretary, and Dr. C. A. Herter, treasurer.

Association News.

RATES TO NEW ORLEANS.

One Fare for Round Trip in Territory of Central and Western Passenger Associations Assured.

Central Association.

The Central Passenger Association has granted a rate of one fare for the round trip on lines in its territory en route to New Orleans and return. This territory comprises Indiana, Ohio, Michigan, a small portion of Pennsylvania and southern Illinois.

Western Association.

The Illinois Central Railroad has granted a rate of one fare for the round trip from all points on its lines. Mr. H. J. Phelps, city passenger agent, informs us of this arrangement, and says that some other roads in the Western Passenger Association have granted the same rate and that more will follow. The Illinois Central Railroad reaches Omaha, Minneapolis, Sioux City, Iowa, and Sioux Falls, S. D., and the precedent established by this road will doubtless be followed by roads covering the large territory of the Western Passenger Association, which extends to Canada and to the Rocky Mountains.

Trunk Line Association.

This association covers New York, Pennsylvania, West Virginia, New Jersey, Delaware, Maryland and part of Virginia, and authorizes the following rate:

> One first-class fare for the round trip from Washington, D. C.; and *from other points in Trunk Line territory* regular excursion fares to Washington or Trunk Line western termini added to one first-class fare authorized therefrom for the round trip; continuous passage tickets in each direction, to be sold and good, going, from Washington, D. C., May 1, 2, 3 and 4, and from other points May 1, 2 and 3, with final return limit to reach original starting point not later than ten days from date of sale, except by deposit of tickets by original purchaser with Joseph Richardson, special agent, Room 204, No. 204 Camp street, New Orleans, La., not earlier than May 1 nor later than May 12, between 8 a. m. and 8 p. m., and payment of fee of 50 cents at time of deposit, and extension of final return limit may be obtained to reach original starting point not later than May 30.

These conditions are in accord with the announcements in THE JOURNAL, Jan. 3 and 31, 1903, from the Southwestern Passenger Association.

Further particulars may be had from roads interested.

THE JOURNAL'S special New Orleans number, April 11, will contain a complete statement of railroad rates from all parts of the country, as announced last week, page 597.

Medical Organization.

Lexington (Ky.) Medical Society.

On January 14 this society disbanded and then reorganized, adopting the constitution and by-laws proposed by the American Medical Association for subordinate societies and re-electing Dr. James C. Carrick, president; Dr. Louis H. Mulligan, vice-president; Dr. George P. Sprague, secretary, and Dr. Francis M. Greene, treasurer.

Berrien County (Mich.) Medical Society.

At the regular meeting of this society at Benton Harbor, February 12, the national plan of reorganization presented at the January meeting was adopted. Dr. Edward J. Witt, St. Joseph, was elected president; Dr. Charles N. Sowers, Benton Harbor, vice-president; Dr. John D. Greenamyer, Niles, secretary; and Dr. Frank M. Kerry, Benton Harbor, treasurer.

Dickinson-Iron County (Mich.) Medical Society.

Dr. Theodore A. Felch, Ishpeming, councilor of the twelfth district for the Michigan State Medical Society, organized this society at Iron Mountain, February 18, with the following officers: Dr. John D. Cameron, Iron Mountain, president; Dr. C. Frithiof Larson, Crystal Falls, vice-president, and Dr. Samuel E. Cruse, Iron Mountain, secretary and treasurer.

Brown County (Wis.) Medical Society.

The physicians of this county met at Green Bay, March 26, and organized a county society to become a branch of the Wisconsin State Medical Society on its reorganization. The following are the officers: President, Dr. B. C. Brett; vice-president, Dr. A. W. Slaughter; secretary, Dr. Walter J. Hagen; treasurer, Dr. J. R. Minahan; censors, Drs. H. A. Wolter, D. J. O'Connor and J. P. Lenfesty.

Drew County (Ark.) Medical Society.

District Councilor Dr. Vernon McCammon, Arkansas City, met the physicians of Drew County at Monticello, in October, 1902, and explained the plan for reorganization suggested by the American Medical Association. A constitution and by-laws in conformity with these suggestions were adopted, and Dr. William T. Stanley, Selma, was elected president; Dr. J. G. McKinney, Nelson, vice-president, and Dr. James R. Tarrant, Monticello, secretary and treasurer.

Macomb County (Mich.) Medical Society.

At a meeting of physicians of the county at Mount Clemens, February 24, Drs. Leartus Connor and Andrew P. Biddle, Detroit, and Dr. Oliver Stewart, Port Huron, were present as delegates from the Michigan State Medical Society. A society was organized on the lines suggested by the American Medical Association for county societies, and the following officers were elected: President, Dr. Philip A. Knight, Utica; vice-president, Dr. Robert L. Parkin, Romeo, and secretary and treasurer, Dr. Joseph M. Croman, Mount Clemens.

Societies.

Medical Society of Alexandria (Va.)—At the annual meeting, February 16, Dr. William M. Smith was elected president; Dr. William R. Purvis, vice-president; Dr. Hugh McGuire, secretary, and Dr. Thomas S. Gibson, treasurer.

Allegan County (Mich.) Medical Society.—At the annual meeting held in Allegan, January 28, Dr. Walter H. Bills, Allegan, was re-elected president; Dr. Milton Chase, Otsego, vice-president, and Dr. William S. Albright, Allegan, secretary and treasurer.

Medical Club of Philadelphia.—The election of officers, January 22, resulted as follows: Dr. Edward E. Montgomery, president; Drs. Roland G. Curtin and Jonathan C. Biddle, vice-presidents; Dr. Guy Hinsdale, secretary, and Dr. F. Savary Pearce, treasurer.

Champaign County (Ill.) Medical Society.—At the meeting, February 12, Dr. E. Fletcher Ingals, Chicago, delivered an address on "Medical Organization," which was freely discussed by the members. At the banquet which followed Dr. Ingals was the guest of honor.

Northeastern District (Mich.) Medical Society.—At the meeting of this society in St. Clair, January 29, Dr. Albert E. Thompson, St. Clair, was elected president; Dr. W. P. Dierck, Marysville, vice-president, and Dr. A. Henri Cote, Port Huron, secretary and treasurer.

Burt County (Neb.) Medical Society.—The physicians of the county met at Tekamah, February 11, and organized, with Dr. Andrew D. Nesbit, Tekamah, president; Dr. Mortimer L. Hildreth, Lyons, vice-president; and Dr. Isaiah Lukens, Tekamah, secretary and treasurer.

Nicollet County (Minn.) Medical Society.—At the annual meeting, January 19, at St. Peter, Dr. Harry A. Tomlinson was elected president; Dr. Jared W. Daniels, vice president; Dr. Mary P. Hopkins, secretary, and Dr. Walter H. Darling, treasurer, all of St. Peter.

Barry County (Mich.) Medical Society.—The first annual meeting was held in Hastings, January 29, at which Dr. James M. Elliott, Hickory Corners, was elected president; Dr. Aleck F. Hutchinson, Nashville, vice-president, and Dr. J. G. McCaffin, Carlton Center, secretary and treasurer.

Eaton County (Mich.) Medical Society.—The annual meeting was held in Charlotte, February 5. Dr. Giles B.

Allen, Charlotte, was elected president; Dr. Mary E. Greene, Charlotte, vice-president; Dr. Warren H. Rand, Charlotte, secretary, and Dr. H. Allen Moyer, Chester, treasurer.

Medical Society of the State of New York.—At its annual meeting in Albany the following officers were elected: Dr. Algernon T. Bristow, Brooklyn, president; Dr. Edward B. Angell, Rochester, vice-president; Dr. Frederic C. Curtis, Albany, secretary, and Dr. Ogilvie D. Ball, Albany, treasurer.

Ulster County (N. Y.) Medical Association.—At the regular meeting in Kingston, February 16, Dr. Henry Van Hoevenberg, Kingston, was elected president; Dr. George S. La Moree, Highland, vice-president; Dr. Mary Gage-Day, Kingston, secretary, and Dr. Alice Divine, Ellenville, treasurer.

Adams County (Neb.) Medical Society.—The physicians of the county met at Hastings, January 31, and organized this society with an initial membership of 20. Dr. Winfield Ackley, Juniata, was elected president; Dr. Jay G. Roberts, Hastings, vice-president, and Dr. Marble, Hastings, secretary and treasurer.

Nemaha County (Neb.) Medical Society.—The physicians of the county met at Auburn, January 28, and organized a medical society, with the following officers: Dr. Ira H. Dillon, Auburn, president; Dr. Benjamin F. Lorance, Brock, vice-president, and Dr. William E. Shook, South Auburn, secretary and treasurer.

Monroe County (Mo.) Medical Society.—This society has been organized at Paris, with the following officers: President, Dr. Benjamin D. Dysart, Paris; vice-presidents, Drs. C. H. Dixon, Holliday, and A. I. Griffith, Stoutsville; Dr. William B. A. McNutt, Monroe City, secretary, and Dr. Fred M. Moss, Paris, treasurer.

Ogle County (Ill.) Medical Society.—At its annual meeting in Oregon, January 7, the following officers were elected: Dr. William W. Burns, Polo, president; Drs. James Parkhurst, Grand Detour, and Jesse C. Akins, Forreston, vice-presidents; Dr. Horace Sheets, Byron, secretary, and Dr. Leo E. Schneider, Oregon, treasurer.

Hall County (Neb.) Medical Society.—The physicians of Hall County met at Grand Island, and organized a society as a component branch of the proposed reorganized state society. Dr. George Roeder was elected president; Dr. Henry D. Boyden, vice-president, and Dr. C. J. Horton, secretary and treasurer, all of Grand Island.

Johnson County (Neb.) Medical Society.—The physicians of the county met recently at Tecumseh and organized a county society, with the following officers: President, Dr. Malcolm Stewart, Tecumseh; vice-president, Dr. Edwin T. Black, Cook; secretary, Dr. Carlton K. Chubbock, Tecumseh, and treasurer, Dr. George J. Rubelman, Tecumseh.

Buffalo County (Neb.) Medical Society.—In pursuance of the plans suggested by the Nebraska State Medical Society, the physicians of the county met in Kearney, February 20, and organized this society, with the following officers: President, Dr. Frank A. Packard, Kearney; vice-president, Dr. James W. Miller, Gibbon, and secretary and treasurer, Dr. George M. Hull, Kearney.

Livingston County (Mo.) Medical Society.—About twenty physicians of the county met in Chillicothe, January 31, and organized a county society, with the following officers: Dr. Rueben Barney, Chillicothe, president; Drs. William L. White, Spring Hill, and William A. Swope, Wheeling, vice-presidents; Dr. Arthur J. Simpson, Chillicothe, secretary, and Dr. Byron N. Stevens, Chillicothe, treasurer.

American Electro-Therapeutic Association.—At the twelfth annual meeting held at the Hotel Kaaterskill, N. Y., the following officers were elected: President, Dr. Daniel R. Brower, Chicago; vice-presidents, Drs. Maurice F. Pilgrim, and C. Frank Osman, Boston; secretary, Dr. Clarence E. Skinner, New Haven, Conn., and treasurer, Dr. Richard J. Nunn, Savannah, Ga. The next meeting will be held in Atlantic City, N. J., September 22, 23 and 24.

Champaign County (Ohio) Medical Society.—At the January 29 meeting, held in Urbana, Drs. Horace Bonner, Dayton, state councilor for the district, Brooks F. Beebe, Cincinnati, and Charles L. Minor, Springfield, presented arguments for reorganization on the plan outlined by the American Medical Association. At the annual election of officers, February 19, Dr. Samuel M. Mosgrove, Urbana, was re-elected president; Dr. David B. Emmons, North Lewisburg, vice-president; Dr. Edwin W. Ludlow, Urbana, secretary, and Dr. David O'Brine, Urbana, treasurer.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, held Feb. 16, 1903.

President, Dr. Alexander Lambert, in the Chair.

A New Method of Fixation of the Movable Kidney.

DR. W. GILL WYLIE commented on the relative frequency of movable kidney in women, and its frequent association with appendicitis, and cautioned the surgeon to make sure that it was really the kidney and not the appendix which was causing the pain. He considered that the effort so commonly made by surgeons to fix the kidney at the level of, or just below, the twelfth rib, as wrong in principle because of the fact that normally the kidney was not a fixed organ, but had a certain degree of mobility. He objected also to selecting this point for the anchorage of the kidney on the ground that if this were done the kidney would be pressed on by tight corsets and bands, thus causing discomfort. The object of his method of operating was to keep the kidney in good position and, at the same time, allow its moving slightly with respiration. The incision should be made just below the twelfth rib and the kidney replaced; then the capsule was pulled out with forceps until the resulting tension was sufficient to hold the kidney just above the twelfth rib and, at the same time, allow of the slight mobility normally possessed by this organ. Having cut away the redundant capsule, the ends were sutured to the fascial lining of the muscles about the opening by means of silk, and the muscles themselves were sewed with catgut.

Results of Kidney Fixation by Present Methods.

DR. A. B. JOHNSON gave a brief sketch of the common methods for anchoring the movable kidney. As regards suture material, his own preference was for catgut.

Discussion.

DR. J. A. BLAKE thought that failure to secure permanent fixation of the kidney often arose from a rotation of the organ by which it came to lie horizontally. He preferred catgut for the sutures, but thought it made little difference whether they were passed through the fatty or fibrous capsule, as they were only of service until granulations had formed.

DR. JOHN F. ERDMANN remarked that, while he employed kangaroo tendon for the sutures, this was not a matter of much importance, and that if the patient could be kept sufficiently quiet the sutures might be entirely dispensed with.

DR. A. H. GOELET condemned catgut as being too unreliable, and stated that his preference was for silk.

DR. E. W. LEE said that when catgut was treated with the Credé silver salts it became strong and could not be stretched. The method of operating which he advocated consisted in splitting the capsule, rolling the latter back on either side into a roll, and making use of the latter for securing a firm hold with the sutures.

CHICAGO NEUROLOGICAL SOCIETY.

Regular Meeting, held Jan. 22, 1903.

The Vice-President, Dr. H. H. Donaldson, in the Chair.

Nature of Neuroglia Tissue.

DR. G. CARL HUBER of the University of Michigan reported a study, extending over a series of years, of neuroglia tissue of different classes of vertebrates, made especially with Benda's sulpha-lizarate toluidin blue method. The research was undertaken with a view of harmonizing the various views expressed concerning the structure of neuroglia tissue and of obtaining data for experimental work. Tissue was studied from man, dog, cat, rabbit, dove, tortoise and frog.

The following general conclusions were reached: the neuroglia tissue of all vertebrates consists of neuroglia cells and neuroglia fibers. The cellular elements vary greatly in size and shape, depending in the main on the spaces which they occupy. In the majority of the neuroglia cells a granular cytoplasm can be clearly made out. This varies greatly in amount, at times forming only a narrow zone around the nucleus; again present in much larger quantity and presenting very distinct protoplasmic branches. In certain cells, which

are designated as "free nuclei," no distinct cytoplasmic covering can be seen. The nuclei of neuroglia cells vary in size, shape and structure. The majority of them may be spoken of as vesicular nuclei with chromatin in the form of a number of relatively large granules, variously disposed. Other nuclei, usually the smaller and smallest seen, present the appearance of compact masses of chromatin, taking the stain relatively deeply. Transition forms between these two varieties of nuclei may readily be made out. The neuroglia fibers show very definite relation to the neuroglia cells, being imbedded in the peripheral layer of their protoplasm. With the method used, whenever the preparation is properly differentiated, the neuroglia fibers could be traced through the protoplasm of neuroglia cells without interruption. In imperfectly differentiated preparations they often appeared as processes. The small, deeply-stained "free nuclei" and the free nuclei showing a vesicular structure show no definite relation to neuroglia fibers, and are looked on as undifferentiated and undeveloped neuroglia cells. Microscopic preparations substantiating the statements made were demonstrated.

Mesoblastic Origin of the Neuroglia Tissue.

DR. SHINKISHI HATAI, from the Neurological Laboratory of the University of Chicago, stated in preface that on examining cross sections of the central nervous system of the white rat and mouse, two kinds of nuclei, differently characterized, are easily recognized. One kind coincides in structure with that found in the nerve cells while the other resembles very much in size, shape and staining character, and in an internal structure, the nuclei found in the walls of the capillaries. These nuclei, so-called, are always surrounded by a small amount of cytoplasm. These facts led him to a systematic study of these structures in order to determine their origin within the central nervous system.

The tissues of new-born white rats and mice were fixed in Carnoy's mixture and the paraffin sections were stained with toluidin blue and erythrosin.

"One group of the nuclei, which resembles in structure as well as in shape those of the nerve cells, can be identified without difficulty as derived from the ectoblast. For convenience I called these nuclei Type 1. The identification of the other group of the nuclei, or Type 2, is, however, difficult since these nuclei have no similarity to the nuclei of the ectodermal derivatives. On examining the capillary wall, I noticed very frequently a nucleus projecting outward, and in some cases these nuclei were isolated from the capillary wall, but lay close to it. Between these two appearances, various intermediate stages could be easily found. In some cases, a tip of the nucleus is still attached to the capillary wall, while the rest of it has become separated. This appearance shows very plainly the migration of the nucleus from the capillary wall into the surrounding tissue. There is no danger of confusing these nuclei with those of the leucocytes which escape from the capillary wall and exhibit ameboid movements, since they differ from them both in structure and size; the former being very much larger than the latter. As soon as the nuclei are separated from the capillary wall they migrate away from the capillary."

Dr. Hatai thought there was no doubt that the nuclei called Type 2 were derived from the capillary wall and migrated away from it. "The identification of these nuclei, which have migrated from the capillary wall, with neuroglia nuclei, is difficult. Since it has been shown that a small amount of connective tissue is present in the central nervous system in both young and old animals, this connective tissue might have been formed by the nuclei which I am describing, but there is no evidence to support the view that this could occur. The large number of the nuclei which have migrated from the capillary walls suggests at once that some of the neuroglia tissue is supplied by these nuclei. This idea is favored by the fact that similar neuroglia nuclei to those migrated from the capillary wall or mesodermal in type, exist in the adult animal."

Dr. Hatai quoted Kuhne, Chittenden, Chavalier and other investigators and concluded "that the nuclei which migrate from the capillary wall into the central nervous system are one source of the neuroglia tissue. The reasons for this conclusion may be summarized as follows:

"1. The great number of these nuclei; 2, neurokeratin may be formed not only by the cytoplasm of the ectodermal cells, but also by the cytoplasm in mesodermal cells; 3, presence of the nuclei of mesodermal type in the central nervous system of the adult animal; 4, ordinary connective tissue nuclei present in the central nervous system are there in much smaller numbers than the nuclei which have migrated from the capillary walls; 5, there is no evidence that the neuroglia fibers stained by the modern neuroglia technics are of ectodermal origin only; 6, since the cytoplasm undergoes very easily morphologic and structural alterations while the nucleus is more resistant, it follows that the nuclei are the better indication of the genetic relationship of the cells; 7, Capobianco and Fragnito, who observed the nuclei which migrate from the meninges into the central nervous system and believe these nuclei form a part of the neuroglia tissue, were unable to trace the successive transformations of the former to the latter.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Chronic Diarrhea.

Lyon, according to an abstract in *Amer. Med.*, states that where there is lienteric diarrhea the food must be as easily digestible as possible. Where the secretion of pepsin is deficient the food should consist of pure milk and of starchy vegetables prepared with milk. If there is hypopepsia accompanied by dilatation and active fermentation the stomach should be washed out. The treatment should be directed toward stimulating the remaining healthy glands of the gastric mucous membrane and which will combat fermentation. The first indication may be met by the administration of sodium phosphate in 2-gram doses (gr. 30) in half a glass of hot water or hot vichy water before breakfast. The following may be substituted:

℞. Sodii chloratis	℥iiss	10
Syr. belladonnæ	℥i	30
Aq. destil.	℥iv	120

M. Sig.: One dessertspoonful before each meal.

Small doses of sodium bicarbonate may also be given before meals. Massage to the stomach has produced very satisfactory results, acting as a tonic to the musculature, decreases stasis, which is a persistent cause of fermentation.

Constipation.

H. Surmont, in *Indian Med. Record*, recommends properly-selected food, which includes some of the coarser articles of diet, honey, cooked fruits, oranges and raisins. In the way of hydrotherapy he recommends cold water in the form of the abdominal douche with broken jets or cold compresses applied over the abdomen and covering them with waterproof cloth and over this a flannel bandage. These should be left in place for half an hour. Cold water should be drunk on rising and a cold enema occasionally.

Massage and Swedish gymnastics are to be employed in the treatment of atonic constipation. The faradic current is also of service. In the way of drugs he recommends psyllium seeds three teaspoonfuls a day, one after each meal, by placing them in a little fresh water and swallowing them. Linseed may be taken in the same manner in tablespoonful doses. The oils may be used, which are classified according to their action, as follows: Oil of sweet almonds, olive oil, castor oil. A teaspoonful of castor oil at bedtime gives, after a few days, good results. This may be given in capsule if necessary. If not sufficient to produce the results a teaspoonful may be given in

the morning. Calomel is of service as a cholagogue and should be given in small doses.

More trustworthy are those preparations which tend to produce muscular contraction of the intestinal coats. Among these preparations the author mentions cascara, senna, strychnia and ergot. His advice is to leave aloes, jalap and rhubarb alone. The latter especially increases the constipation after short amelioration. Strychnia should be given in doses of gr. 1/70 (.0009) three times a day. This may be alternated with cascara, the powder, extract or cascarin.

The following combination containing senna is recommended:

℞.	Pulv. senna (washed in alcohol) 3iiss	10
	Sulphuris sublim. 3i	4
	Pulv. feniculi	
	Pulv. glycyrrhizæ, āā.....3ss	2
	Pulv. sacchari 3i	4

M. Sig.: One teaspoonful every evening or every morning where patients are unusually susceptible to the drug.

Podophyllin and euonymin are also recommended as follows:

℞.	Podophyllin .....gr. 1/3	02
	Saponis q. s.	
M. Ft. pil. No. i. Sig.: One or two daily.		
℞.	Euonymin .....gr. 3/4	05
	Saponis q. s.	
M. Ft. pil. No. i. Sig.: One or two daily.		

The following points are emphasized by the author: Diet and hygiene must always take preference over treatment by drugs. Drugs should always be used in small doses, tonic, so as not to stimulate too much a feeble muscular contractibility. No drug should be continued too long; discontinue it for a time and return to it again so as to prevent the system getting accustomed to it.

Enemas may be employed. To eight ounces of water two level tablespoonfuls of salt may be added or three of brown sugar or honey or from two to four of glycerin. The time most suitable for absorption seems to be an hour after breakfast or dinner, when the stomach begins to empty itself, and thus aids peristalsis.

Stimulating enemas and suppositories should not be employed daily as a catarrh of the rectum or colon may be set up and prevent their further use. They are, however, of great service to those individuals who complain that they never have any desire to go to stool, and in whom constipation appears to be connected with a diminution of the sensibility of the rectum. These patients should be instructed also to go to the closet at a certain time each day.

Excessive Perspiration.

The following powder containing salicylic acid is recommended to relieve excessive sweating of any parts of the body:

℞.	Pulv. acidi salicylici 3ii	8
	Pulv. zinci carb. precip. 3ii	8
	Pulv. magnesii ustæ 3iii	12
	Pulv. amyli .....℥iiss	75

M. Sig.: Apply as a dusting powder.

Treatment of Buboes.

William A. Groat, in *N. Y. Med. Journal*, states that the treatment of buboes which show signs of suppuration, comprises rest in bed, removal of the exciting cause or inhibition of its virulence and local application to the inflamed gland. The patient must remain in a recumbent position, with light, non-stimulating liquid diet. One-tenth grain of calomel should be administered every hour until the bowels move freely, and subsequently salines should be given throughout the course of the disease. Calcium chlorid in three to five-grain doses should be given three times a day.

If acute gonorrhea is the cause the urethra should be irrigated two or three times a day, with at least two quarts of warm, normal salt solution followed by a weak solution of some of the organic silver compounds. Later the number of irrigations may be decreased to one daily, and the strength of the silver solution increased. All sores on the penis should be cauterized, and if secondary symptoms have appeared mercurials should be pushed.

Locally to the inflamed glands the following combination should be applied:

℞.	Ichthyol 3i	4
	Guaiacol 3ss	2
	Ung. hydrarg. 3ss	2
	Lanolini q. s. ad.....3v	20

M. Sig.: Apply thickly over the swollen glands, cover with gauze and a layer of cotton or cotton wool dressing.

C. D. Luckett, in the same periodical, recommends the following local application:

℞.	Ung. hydrarg.	
	Ung. belladonnæ	
	Ichthyol	
	Lanolini, āā 3iv	15

M. Ft. unguentum. Sig.: Apply locally every other day until resolution is accomplished.

Joseph N. Weller recommends the application of the following:

℞.	Tinct. opii .....℥i	30
	Liq. plumbi subacet. dil. .....Oi	480

M. Apply locally on gauze saturated and place an ice bag over this compress.

When there is much induration the following is recommended:

℞.	Iodi .....gr. v	30
	Pot iodidi .....gr. xx	1 30
	Lanolini .....℥i	30

M. Sig.: Apply locally.

The author has obtained good results by injecting the following into the diseased parts:

℞.	Acidi carbol. 3iss	6
	Aq. destil. q. s. ad.....℥i	30

M. Sig.: Inject a few drops of the solution into the gland at various points by means of the hypodermic syringe. These injections should be made once a day for three days. A good point he brings out is that this watery solution permeates the gland more thoroughly than the pure drug, which only cauterizes in a limited area.

In debilitated persons tonics containing iron, quinin and strychnin should be given. If there is suspicion of the trouble being tuberculous, guaiacol in doses of five minims should be given internally. Rest and elevation should be carried out in all cases until all of the acute inflammation has subsided.

Bromoform.

The following combination is recommended by Scoville in administering bromoform:

℞.	Bromoformi 3ss	2
	Tinct. tolutani 3i	4
	Mucil. acaciæ 3ii	8
	Syrupi simp. 3iv	15
	Aq. menth. viridis q. s. ad.....℥ii	60

M. Place the mucilage in a bottle and add an equal volume of the syrup, then add the bromoform and tincture of tolu, shaking well after each addition.

The following formula is sometimes employed in administering bromoform:

℞.	Bromoformi .....gtt. x	65
	Alcoholis 3i	4
	Syr. simp, ...3iii	12
	Aq. destil. .....℥iiiss	105

M. Sig.: One to two tablespoonfuls every hour.

Eclampsia.

Maygrier, in the *Med. Press*, states that as soon as the diagnosis of albuminuria is made every pregnant woman should be placed on a milk diet and put to bed. When eclampsia is diagnosed the first thing is to relieve the system of toxic principles and to calm the nervous excitability. The first indication is filled by blood-letting—withdrawing from ten to twelve ounces as rapidly as possible, followed by an injection of artificial serum equivalent in amount to the blood withdrawn. The agitation and excitability are best controlled by a few whiffs of chloroform and an enema of chloral. He does not recommend rapid delivery as the eclampsia could persist after delivery, and on the other hand pregnancy could continue after the attack. Only two complications could

warrant intervention: Anuria or a rise in temperature. Beyond these conditions the pregnancy should not be interrupted. If labor has set in then every means should be taken to perform rapid delivery.

Medicolegal.

Special Damages to Physician Which Must Be Pleaded.—What is entitled in the Court of Appeals of Kentucky "the case of the Louisville & Nashville Railroad Company vs. Reynolds" was brought to recover for personal injuries, by the latter party, who stated on the witness stand that he was a practicing physician, making a specialty of diseases of the eye, ear, nose and throat for something like thirty years. His allegation as to the damages was that he "was badly bruised and injured in his person, and his health and vitality permanently impaired, and his ability to walk with ease and comfort permanently and greatly decreased, and he was also caused great mental and physical suffering, and for a long time rendered incapable of attending to his business; whereby he has been damaged in the sum of $10,000, for which he prays judgment and all proper relief." For 17 or 18 days after his injury he was not able to sit up, and at the end of three months was not able to ride in a street car. The jury returned a verdict for $9,166.66, under an instruction allowing them to find, among other things, such an amount as would fairly and reasonably compensate him for the value of time lost. But the Court of Appeals holds that the petition in this case was not sufficient to admit evidence that he was injured during the best time of the year for his practice, when he earned something more than $100 per day. It says that the fact that this was the best season of the year for him in the practice of his specialty, and that the time he lost was so valuable, was not to be inferred from his injury, or the bare allegation that he lost time; and, to justify a recovery of items so unusual, the fact should have been specially pleaded. In other words, it applies the rule that where special damages are not such as the other party would naturally anticipate from the injury, they must be pleaded with sufficient particularity as fairly to apprise him of the charge which he is to meet.

Validity of Notes Given to Unlicensed Practitioners.—The Supreme Court of Nebraska holds, in the case of the Citizens' State Bank of Newman Grove vs. Nore, that a note given for medical services by an unlicensed practitioner may be recovered on by a bona fide purchaser, notwithstanding the provisions of article 1, chapter 55, of the Compiled Statutes, prohibiting the practice of medicine without a license. It says that in that state a statute will not be construed so as to make a negotiable instrument void in the hands of a bona fide purchaser unless the act specifically so declares. Article 1, chapter 55, of the Compiled Statutes of Nebraska makes it the duty of all persons desiring to practice "medicine, surgery or obstetrics" in that state to obtain a certificate from the state board of health, and to file the same with the clerk of the county in which they desire to practice. Section 15 provides: "No person shall recover in any court in this state any sum of money whatever for any medical, surgical or obstetrical services unless he shall have complied with the provisions of this act and is one of the persons authorized by this act to be registered as a physician." Section 7 declares it to be unlawful for any person to practice in any of these lines without first obtaining and registering such certificate; and section 16 makes it a misdemeanor to so practice, and imposes a fine therefor. It will be seen, the commissioners say, after thus summarizing the legislation invoked in this case, that none of these provisions declares a contract for medical services by an unlicensed practitioner to be void. Indeed, while section 15 provides that "no person shall recover," the latter part of the section indicates that this prohibition is limited to the practitioner himself. Again, they say that they fully recognize the importance of such legislation as the medical act. It embodies a fixed and time-honored policy of the most vital concern to the state and its people. But it may well be questioned whether the evils consequent on the free circulation of the notes given for services of unlicensed practitioners could be more serious than the derangement of business resulting from a rule that would make all such notes void in the hands of innocent purchasers. It must be remembered that instruments like these have no earmarks and, when once it is understood that a limited and indistinguishable class of them is deprived of the virtues of negotiability, a step is taken toward casting the taint of suspicion on all.

Liability for Necessaries Furnished the Quarantined.—A Texas statute provides that: "Whenever the commissioners' court of any county has reason to believe that they are threatened at any point or place within or without the county limits with the introduction or dissemination of a dangerous, contagious or infectious disease that can and shall be guarded against by quarantine, they may direct their county physician to declare and maintain said quarantine against any and all such dangerous diseases; to establish, maintain and supply stations or camps for those held in quarantine; to provide hospitals, tents or pest houses for those sick of contagious and infectious disease; to furnish provisions, medicine and all other things absolutely essential for the comfort of the well and the convalescence of the sick. The county physician shall keep an itemized account of all lawful expenses incurred by local quarantine, and his county shall assume and pay them as other claims against the county are paid." The Court of Civil Appeals of Texas holds, King County vs. Mitchell, that a proper interpretation of this statute would require that a county whose commissioners' court has determined that they are threatened with the introduction or dissemination of a dangerous, contagious, or infectious disease, that can and should be guarded against by quarantine, and has directed the county physician to declare and maintain such quarantine, should furnish to those thus detained such provisions, medicines and other things as are absolutely essential to their comfort and convalescence, and is legally liable therefor. It can not hold, it says, that it is optional with a county to assume the duty of supplying these things. Nor can it assent to the contention that the county would be relieved of this duty because of the fact that there was no county physician to keep the itemized account of the expenses incident to the quarantine after the county physician had resigned. The beneficial purpose of the statute was to supply to those detained in quarantine such things as were absolutely essential to their comfort and convalescence, and the duty of the county physician in the particular of keeping an itemized account of expenditures is, at most, only ministerial in its nature, and the liability of the county not made to depend on his compliance. If such were the case, the county could in the most meritorious cases avoid all liability by refusing to appoint such auditing officer. Further, it was the duty of the county judge to appoint another physician on the resignation of the county physician referred to. Here the county made an order directing a quarantine, appointed a county physician, who established such quarantine, placing guards, etc., knew of the resignation of the county physician, and continued thereafter to maintain such quarantine, without providing another, and without in any manner providing for the wants and necessities of those thus affected by the order and, the court holds, must be held to have consented to the party suing supplying such things as it was legally liable for, but which it had made no arrangements to supply. However, such an account, the court holds, could not be treated as a verified one under the state statute requiring denial by affidavit before trial if to be disputed. To treat it as such an account, and to deny the right of cross-examination as to the correctness or reasonableness of the items sued for, the court says was material error, for it was certainly pertinent to inquire into the correctness and reasonableness of the items, to the end that the county be not held liable save in the event the "provisions, medicine and other things" appeared to be "absolutely essential for the comfort of the well and the convalescence of the sick," considering the nature and extent of the quarantine.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

February 21.

1 *Chronic Pancreatitis. B. L. Hardin.
2 *Some Further Results in the Treatment of Pulmonary Tuberculosis. J. H. Elliott.
3 *Dangers from the Indiscriminate Use of Morphia. T. D. Crothers.
4 *Routine Examinations of Chyme. A. L. Benedict.
5 *Briefs on Physical Training. G. Frank Lydston.
6 *Gonorrhea in Children. H. Lowenburg.
7 *Vital Statistics: A Plea for Actuarial Administration and Control of the Great Resources of Preventive Medicine. (Concluded.) John S. Fulton.
8 The Importance of Mechanical Manual Training to the Surgical Student. S. D. Van Meter.

1. **Chronic Pancreatitis.**—This disorder was first described in 1896, but has been fully understood only within the last eighteen months. Hardin reports a case and discusses the anatomy, etiology, etc. He thinks the cause is obstruction due to calculi lodged in the pancreatic duct, pressure from gallstones, infection by micro-organisms, or to toxic substances in the blood. The symptoms are severe hypogastric pain, central in situation, nausea and vomiting, jaundice, diarrhea or constipation, undigested muscle fiber in the dejecta and in rare cases lipuria. In advanced cases glycosuria occurs. The diagnosis is difficult. The presence of undigested muscle fiber in the stools and the absence of carbolic acid in the urine after the administration of salol are good tests, but we must base the diagnosis mainly on jaundice, paroxysmal epigastric pain, midepigastric tenderness and resistance, rapid loss of flesh and strength with absence of marked anemia and leucocytosis, the presence of undigested muscle fiber and the peculiar reaction of the urine to the phenylhydrazin test. In many cases exploratory operation should be done. The disease may be a chronic one, but early operation generally gives good results and mortality will be practically nil. If sugar is found in the urine the prognosis is unfavorable for it means that the pancreas is pretty nearly destroyed.

2. **Tuberculosis.**—The experiences at the Muskoka Cottage Sanatorium for the treatment of tuberculosis are reviewed by Elliott, who reports very favorable results.

3. **Morphin.**—Crothers pleads against the careless use and prescription of morphin as causing the morphin habit.

4. **The Gastric Test.**—Benedict gives details of the examination of the stomach contents after the test meal, using bread and butter for the simple test meal, and allowing one and one-fourth hours. In a meal containing meat and vegetables, one and one-half to two hours. He prefers the use of the large tube to bring out the contents. The various tests for acidity, carbohydrates, bile, proteids, etc., are described, as well as the microscopic findings. He remarks that it is worse than looking for a needle in a haystack to attempt to diagnose ulcer, cancer, catarrh, etc., from the microscopic examination. For any serious investigation with regard to these points the jejune stomach should be washed out. Scraps of exfoliated gastric epithelium are practically always found. Setting aside cancer and ulcer it is exceedingly difficult to distinguish between the normal shedding of epithelium and the indications of genuine gastritis. He says he is disposed to think that almost every stomach is almost constantly in a state of localized catarrh.

5. **Physical Exercise.**—In this first article Lydston speaks of the mistakes that have been made in prescribing exercises in a routine way, leading to such measures as advising postmen to take walks or gripmen to indulge in free exercise in the open air. There should be a department of physical training attached to the chair of therapeutics in every modern medical school. The value of a knowledge of physical training in the special departments such as neurology and surgery, especially orthopedic surgery, is obvious..

6. **Gonorrhea in Children.**—Lowenburg reports a case in a four-year-old child who probably infected himself by his hands as he was in the habit of handling rags and clothes from the refuse boxes. The lesson which the case teaches, he says, is:

1. All urethral discharges in young boys should be viewed with suspicion.
2. All such discharges should be submitted to a microscopic examination.
3. Should the gonococcus be found the possibility of the case assuming a medicolegal nature should be remembered.
4. The question of rape should be carefully eliminated or conclusively proved.
5. Treatment consists in securing local cleanliness and a free action of the emunctories in conjunction with the administration of urinary antiseptics and alkalies.
6. Gonorrhea is no contraindication to circumcision.
7. Vulvovaginitis in little girls is very often due to gonorrhea.

7. **Vital Statistics.**—In the conclusion of his article, Fulton insists on the importance of thorough local registration covering:

1. Records of death made at the time and place of their occurrence, by the most competent persons acquainted with the facts, including a medical certification of the cause of death, the making and filing of such a record being in every instance an indispensable preliminary to the disposal of the dead body; 2, records of birth, secured by the payment of fees, by every appeal to private interest and public necessity, including, if possible, conditioning of certain privileges of citizenship on recorded evidence of attained age; 3, records of marriage and divorce, with all such items of information as have statistical importance; 4, records of sickness, including all cases of those infectious diseases which fall within the provisions of the notification laws, all cases of sickness which come under study in the public health laboratories, all sickness which is relieved at public cost, all sickness falling under the observation of inspectors of schools, tenements and factories, and all sickness occurring in the public services, *e. g.*, Army, Navy, police, and fire departments.

Finally, the data of vital statistics should be systematically utilized, not only for the broader purposes which have grown into common use, but for the minuter inquiries which such records may answer.

Medical News, New York.

February 21.

9 New York Academy of Medicine—Address. Robert F. Weir.
10 The Young Practitioner. Andrew H. Smith.
11 *Functional Disorders of the Biliary Secretion and Their Treatment. H. Richardson.
12 *The Treatment of Tuberculosis. Charles W. Heitzman.
13 *A Contribution to the Surgery of the Internal Saphenous Vein. William F. Campbell.
14 *Empyema of the Accessory Sinuses of the Nose. J. H. Woodward.
15 A New Sputum Slide. James R. Arnell.

11. **Functional Disorders of the Liver.**—These conditions which may be included under the head of morbid excess, morbid deficiency and a vitiation of the bile, are noted by Richardson. He remarks that a considerable percentage of the population is more or less affected by gallstones, judging from the Johns Hopkins autopsy reports, about 7.5 per cent. in this country. The surgeon seems to have the monopoly of treatment of these conditions, but he still thinks much may be done with drugs. He speaks particularly of the use of glycocholate of soda.

12. **Tuberculosis.**—Heitzman briefly reviews the general facts in regard to the treatment of tuberculosis and concludes that the hope for the future is in hematotherapy and serumtherapy.

13. **The Internal Saphenous Vein.**—From a number of experiments performed on 50 subjects, Campbell finds a considerable variation in the tributaries of the internal saphenous, and that the proper point in which to ligate is that portion of the vein which lies between its last tributary and the saphenous opening. This space is about ¾ of an inch in length, varying somewhat in different subjects. A circle about the size of a five-cent piece ought to fix the limits within which we can expose this portion of the vessel. The author found that the end of a line, 3½ inches long, projected from the spine of the pubes at right angles to Poupart's ligament, will always fall within this circle. The end of this line marks the point for the center of the incision, which should be about one inch long and parallel with the fold of the groin. In retracting the edges of the incision, retract the upper edge so as to ligate as near the saphenous opening as possible.

14. **Empyema of the Accessory Sinuses of the Nose.**—Woodward describes the various conditions of suppuration in the accessory sinuses in which he includes the ethmoidal cells. In view of the variations in the size and position of the frontal sinus he gives the following rule:

Almost without exception, when they exist at all, the frontal sinuses will be found immediately underneath the triangles constructed as follows: Connect the supra-orbital foramina or notches by a horizontal line, drop from its mid-point a vertical to the fronto-nasal suture, and complete the triangles by lines drawn from the naso-frontal end of the latter to each respective supra-orbital foramen. Thus two triangles are constructed above the root of the nose, through which even the smallest sinus may be opened. The anterior wall of the sinus may be 8 mm. in thickness, although, as a rule, it is very much thinner. In operating through the anterior wall of the sinus, our course should be directly backward. If, however, we have traversed in this direction 8 mm. of bone without opening the sinus, it would be wise to change the course of the excavation to downward, backward, and inward, toward the uvula. Thus, opening the anterior cranial fossa may be avoided, while our explorations would expose even the smallest sinus, or, in the absence of the sinus, open into the anterior ethmoid cells.

He prefers to approach the frontal sinus through the anterior wall as it gives a chance for more thorough treatment. To reach the maxillary antrum he would prefer an opening high up in the soft parts under the upper lip, which will remain open long enough for lavage and drainage. It is not advisable in his experience to irrigate the antrum even with the mildest solution for a longer period than four or five weeks. Irritating antiseptics should never be used. If, after treatment, pus formation is marked a large opening for drainage may be cut in the wall of the inferior meatus and the sinus irrigated as circumstances require. Of course the obstruction in the nose should be removed as a preliminary treatment. Suppuration in the ethmoidal cells he attacks preferably by the intranasal route. They may be opened through the ethmoidal sinus and through the orbit, but only when there is complicating sinusitis or orbital abscess and even then the intranasal operation should still be performed. The sphenoidal sinus should be approached through the intranasal route after removal of the middle turbinated bone.

New York Medical Journal.

February 21.

16 *A Critical Review of Some of the Recent Literature of Tuberculosis. Jonathan Wright.
17 *Pulmonary Anesthesia. W. A. Bryan.
18 A Case of Intussusception in a Baby Five Months Old. Louis Fischer.
19 Pyemia and Exsection of Part of the Lower Jaw Following a Fracture Due to Tooth Extraction. J. A. Hofheimer.
20 *The Prophylaxis of Appendicitis. H. Illoway.

16. **Tuberculosis.**—Wright reviews the literature of the transmission of animal tuberculosis to man. He questions the possibility of this, holding that Koch's paper has done a great deal of good, though his views are not original. The inhalation of bacteria is also studied and he finds both from his own studies and the recent work on the subject by Saenger that the bacteria can not penetrate very well to the alveolar regions by inhalation. He suggests a discussion of the diagnosis of tuberculosis, which is probably often erroneous. Influenzal hemorrhages sometimes simulate early tuberculosis, as suggested by Donelan. The laryngeal and pharyngeal forms of tuberculosis and their curability are also discussed at some length. In conclusion he speaks of the serum cure, which from reports has a rather encouraging prospect. He suggests that if we could form the habit of going to Germany for our facts and to England for our deductions, we should in the former find a more abundant harvest, and in the latter a more trustworthy separation of the wheat from the chaff.

17. **Pulmonary Anesthesia.**—Bryan says that the paralysis of respiration due to forcing the anesthetic and the crowding of blood in the right heart which occasionally occurs during the second stage, may cause distension beyond the power of contraction, and death ensues. He suggests that the means to prevent the second stage of struggling in anesthesia are ample and the co-operation of the patient can often be usefully employed. A patient at the beginning of anesthesia had to be held by four men; he was released and told to clasp his hands. He immediately became quiet and did not move again until he came out of the anesthetic. Death may occur from paralysis of the heart from over-dosage and from the operation, especially in the region of the fifth nerve. Care on the part of the anesthetist can prevent either of these accidents. These statements are especially applicable to chloroform. Death may occur instantaneously from paralysis of the heart during complete anesthesia; from damming of the blood in the right heart at a stage when it is preventable, and from paralysis of the heart due to operative interference in incomplete anesthesia; from obstruction of the respiratory passages, causing asphyxia, and from the combined shock of anesthesia and operation. In the last two cases it is usually preventable. In impaired respiration or heart function, the rule is to lower the head to allow a freer flow of blood to the brain and the heart, but where an intra-abdominal obstruction to diaphragmatic function is causative of the symptoms, as in abdominal tumors, the only course is to elevate the head and relieve the pressure of the tumor on the heart. When conjunctival reflexes are gone, we are reasonably certain of surgical anesthesia. On giving too much or too little of the anesthetic, particularly ether, the pupil dilates. The question is whether this dilation is a danger signal or a sign of too little anesthesia. He says close the eye, open it again in the presence of light; if the pupil reacts to light, the patient is safe and more ether can be given; if the pupil will not respond to light too much ether has been given, and we must wait for the pupil to respond. Under complete anesthesia, when the steady, straightforward stare of the eyes is supplanted by a nystagmus, it means the patient is coming out from under the drug and needs another dose. In surgical anesthesia, respiration is regular, full and stertorous. A deep sighing respiration nearly always precedes the appearance of reflexes and should be recognized as their forerunner. The general circulation should be watched in all cases as an index to the condition of the blood and heart. He speaks in conclusion of chlorid of ethyl as a valuable anesthetic, being quicker in action with a quicker return of consciousness. He ranks danger as regards mortality as: 1. Chloroform; 2, ether; 3, ethyl chlorid, and fourth, nitrous oxid. He gives ethyl chlorid through a tight-closed cone that allows a spray of the liquid to run on a piece of gauze, over which all the inhaled air must pass, and containing an outlet valve, so as not to permit waste by expiring through the same opening. This agent is peculiar in that not every case is completely relaxed by it, and ocular reflexes are not always destroyed, but otherwise the anesthesia is complete.

20. **Appendicitis.**—Illoway considers constipation the principal factor and one much more common than is generally recognized, the patients themselves not estimating their own condition properly.

Medical Record, New York.

February 21.

21 *The Treatment and Care of Consumptives at Their Homes, and the Urgent Need of Local Sanatoria. S. A. Knopf.
22 *The Present Status of Surgery of the Gall Bladder and Bile Ducts. William J. Mayo.
23 *Post-operative Malaria, with a Report of Two Cases. John T. Moore.
24 *Trachoma in the Public Schools of New York. Walter E. Lambert.

21. **The Home Treatment of Consumption.**—Knopf gives a description of appliances for the care of the sputa, directions for the care of the patient, use of light, air and hydrotherapy and pleads for the establishment of a sanatorium in the neighborhood of every large city.

22. **Gall Bladder Surgery.**—The percentage of latent gallstones commonly accepted is held by Mayo as probably too high, and he asks the question what causes latent calculi to become active. Remarking on the theory of Kehr, who attributes everything to infection, and the other more generally adopted one of mechanical interference with drainage, he thinks both have their share. He compares the condition with appendicitis, which may have its alternations of aggravation and rest. In some cases the results of early operation for gallstone disease are remarkably good. The death rate under his hands was less than 1 per cent. In the later stages, however, after repeated attacks of biliary colic, with adhesions and general infection of the parts, the condition is different and operation is fraught with some danger. It is in this class of cases that cancer of the gall bladder is most likely to occur. In 49 of his cases stones were found in the common and hepatic ducts, with or without jaundice, but in any event necessitating a very serious operation. Infection of the liver ducts introduces a serious element in the prognosis. Most deaths after operation he attributes to this cause.

23. **Post-Operative Malaria.**—The revival of malaria after operations or injuries, which is a matter of common faith among physicians of malarial districts, has been denied, but Moore here reports two cases, which he thinks prove the correctness of the belief. He suggests a blood examination by the microscope in every case from a malarial locality before operation, and says that many infections which have lain dormant for weeks, months and even years may be rekindled. Malarial fever, especially the chronic forms, brings out a very unfavorable condition for the healing of wounds and the reaction from the shock of the anesthesia and operation. It is reasonable to suppose, he holds, that many cases of fatality after operation are due to the presence of the malarial parasite.

24. **Trachoma.**—The conditions in the New York schools are reviewed by Lambert, who believes in thorough inspection and a special hospital for the treatment of all contagious eye diseases in New York City. It would be important, of course, to have the inspectors thoroughly competent men, who will examine the upper as well as the lower cul-de-sac of the eye.

Boston Medical and Surgical Journal.

February 19.

25 *Observations on Long-Distance Runners. J. B. Blake and R. C. Larrabee.—The Blood. Ralph C. Larrabee, Wilder Tileston and Wm. R. P. Emerson.—The Hearts. Ralph C. Larrabee and Lawrence W. Strong.—Kidneys. John M. Connolly.

26 *Medical Treatment of Intestinal Obstruction. Thomas F. Harrington.

25. **Long-Distance Runners.**—This subject takes up most of this issue and includes general observations as to the condition of the runners, pulse, weight, temperature, condition of the blood, heart, kidneys and physical characteristics. The distance run was about twenty-four miles over a more or less hilly country. The effects seem to have been largely physiologic; pathologic conditions were not noted. So far as known none suffered serious or permanent harm from the race. The heart changes seemed to be physiologic. The article is an interesting study.

26. **Intestinal Obstruction.**—The different forms of intestinal obstruction and their non-surgical treatment are described by Harrington. In cases where foreign bodies have been swallowed, he advises against castor oil administration, but to give food that will produce bowel evacuation. Examine the rectum frequently as the foreign body often lodges there. In intussusception he thinks it best to chloroform the child, lay it on its back, and slowly inject one or two gallons of warm water into the rectum. He remarks that the rectum is capable of holding 6 quarts (?). Large enemata should always be tried before advising surgical interference. He thinks the experience with exploratory laparotomy offers little to endorse this short road to knowledge. The article is one that rather depreciates the value of surgery in these cases.

Philadelphia Medical Journal.

February 21.

27 *Tropical Diseases—Abscess of the Liver. Charles F. Kieffer.

28 *The Toxemia of Pregnancy. (To be Continued.) William H. Wells.

29 *Uterine Carcinoma—Its Treatment by the Combined Use of the Finsen Light and the Roentgen Ray. George G. Hopkins.

30 Report of a Case of Transverse Myelitis in a Newborn Infant. Alexander H. Davisson and D. J. McCarthy.

31 *Retinal Hemorrhages: An Aid to the Early Recognition of General Arterial Degeneration. Henry C. Haden.

27. **Tropical Diseases.**—This fifth lecture by Kieffer is devoted to abscess of the liver and more especially to tropical abscess, which is in the vast majority of cases due to the *Amœba dysenteriæ*. Predisposing causes, however, are necessary. These are usually found in the free living, both as to alcoholic beverages and food, but especially the former. The natives are quite as liable to it as the Europeans if they follow the same habits of diet and drinking. European women and children are, as a rule, free from this complication. There is a small group not due to this cause, but to the *Bacillus coli*, and the various pyogenic organisms may have their causal action. Cantlie holds that all intrahepatic abscesses are amebic, and that the so-called "idiopathic abscesses" are suprahepatic, or subhepatic, that is, abscesses of the dome or concavity. The symptoms may be obscure; hectic range of temperature, liver enlargement, sense of weight and fulness, occasionally deformity, pain especially in the right shoulder and occasionally a sharp pain in the esophagus in swallowing, while a hacking unproductive cough may be present. There is characteristic decubitus; the patient lies well over on his right side with the shoulder drawn down and the knee drawn up. Jaundice is rare. Ascites only occurs when the abscess presses on the portal vein, which is of some importance in the operative treatment. The old-fashioned way of leaving the abscess to "determine its own direction" is condemned; the "determined" spot is usually a grave. The proper method is to operate; 90 per cent. of cases of single abscess operated on fairly early recovered. If spontaneous rupture occurs into the colon, about one-half recover; rupture elsewhere is not nearly so favorable. The diagnosis is difficult. The common mistake is to call the condition malaria, but he points out the differences, especially the character of the fever, occurring at or near the same hour every day, which is clearly not malaria. In all obscure cases, he says, attended with signs of sepsis, insert an aspirator to make the diagnosis sure. Leucocytosis is of some importance. It may be absent, but its presence is corroborative. Sometimes the abscess may be intimately connected with the parietes, though it is difficult to be sure as to locality. Usually when the liver is punctured, respiratory excursion gives a pendulum-like movement of the needle. In this class of cases this movement may be absent. The treatment will be discussed in a coming lecture.

28. **Toxemia of Pregnancy.**—The theory of convulsive seizures of eclamptic or pregnant women is coming to be that they are due to a general toxic state of the blood, instead of being so exclusively a kidney affection as was formerly held. Wells has had opportunity to note the effect on pregnant women of stomach and intestinal catarrh following influenza. He thinks these are often the predisposing cause of what seems to be a rather resistant form of toxemia. Most of the cases occur in full-blooded rather than in anemic women. The symptoms are generally headache, pain and soreness about the eyes, occasionally photophobia, a dull and heavy feeling, sensitiveness to changes of weather, frequent urination with less than normal quantity, a sort of pyrosis, occasional nausea and edema. He describes several cases and remarks that the symptoms are quite different from those usually described in text-books, except those of recent date. The first case briefly mentioned is one in which the kidneys seemed to be suffering most, with albumin and casts, mental dulness with general symptoms pointing to uremia. The second type, of which several cases are reported, presents symptoms of chronic gastro-intestinal catarrh, but with a urine characteristic of toxemia. He holds that in the excretion of urea we have the most valid index of solid excretion. This is never as great in amount in the pregnant as in the non-pregnant condition, and an increase in the toxic symptoms is almost invariably preceded by decrease in the urea percentage. It is impossible to lay too much stress on the value of clinical study of the urine of pregnant patients. He always looks with suspicion on any headache, nausea or indigestion in pregnant women and instructs them to report at once if they have any of these symptoms. The pathology is noted—changes in the kidney, heart, liver and brain.

29. **Carcinoma of the Uterus.**—Hopkins finds the combined light and *x*-ray treatment of special advantage in uterine cancer and describes the arrangement which he has made for securing it. He would give about an hour's exposure to the Finsen light and about five or eight minutes to the *x*-ray as a treatment. This has given good results.

31. **Retinal Hemorrhages.**—With a report of two cases of retinal hemorrhage and remarks on the importance of the symptoms, Haden concludes as follows:

1. Retinal hemorrhages, associated with high arterial tension and accompanied by transitory albuminuria, are significant of beginning widespread arterial degeneration.

2. That in those cases of so-called physiological or transitory albuminuria, occurring in active, healthy young business men or students, in those who are working under forced pressure, ophthalmoscopical examination should be made for retinal hemorrhages.

3. When retinal hemorrhages occur without albuminuria, the patient should be kept under observation, the urine to be examined from time to time and the quantity passed noted.
4. In case of finding these conditions, it is our duty to warn the patient of his condition, and, as Osler says, "so gain his intelligent co-operation," and preserve his life and usefulness.

Cincinnati Lancet-Clinic.

February 21.

32 A Trunk Sewer for Mill Creek Valley. Louis Schwab.
33 A Plea for Spring-time Movers. Evelyn B. Dodd.
34 Neuralgia. F. Pirnat.
35 Surgery of Prostate, Pancreas, Diaphragm and Spleen. (Continued.) D. Merrill Ricketts.

St. Louis Medical Review.

February 7.

36 Views Suggested by the Study of the Etiology of Puerperal Eclampsia. J. K. Bauduy.

February 14.

37 Recent Radical Operations for Cancer of the Uterus. Fred J. Taussig.

American Journal of Obstetrics, New York.

February.

38 *Transabdominal Intra- and Extra-peritoneal Ureterovesical Grafting. Dougal Bissell.
39 Intra-abdominal but Retroperitoneal Shortening and Anterior Fixation of the Round Ligaments for Posterior Uterine Displacements. F. F. Simpson.
40 *Intramural Extraperitoneal Anchorage of the Round Ligament for Posterior Displacement of the Uterus. George H. Noble.
41 Two Hysterectomies for Fibroma Uteri. H. Grad.
42 Sarcoma of the Uterine Parenchyma. Henry D. Beyea.
43 Hepatoptosis. Irving Miller.
44 Strangulated Hernia in Children Under One Year; Report of a Case Twenty-seven Days of Age; Herniotomy; Recovery. W. B. Reid.
45 *Management of Difficult Breech Presentations. H. J. Stacey.
46 *Thoughts on the Prophylaxis of Puerperal Eclampsia. Douglas H. Stewart.

38. **Ureterovesical Grafting.**—Bissell's method consists in finding the ureter through an incision in the anterior surface of the broad ligament, and a dissection downward between the broad ligament folds, passing the forceps through the urethra into the bladder and up to the posterior vesical wall just below the junction of the broad ligament and the bladder, then incising the bladder between the blades and dragging the ureter through and anchoring it with an intestinal silk suture. He claims this method is most direct, admits of extraperitoneal manipulation and extraperitoneal implantation at the point of selection of the bladder wall; shifts the ureter but slightly from its normal direction, and allows thorough provision for leakage through the vagina at the base of the extraperitoneal space within the folds of the broad ligament.

40. **Retro-Uterine Displacement.**—The method here described by Noble is, in brief, the intramural extraperitoneal implantation of the round ligaments. Through a transverse incision in the lower abdomen the round ligament loops are brought forward and the ends fastened together, if long enough to meet on the median line, in front of the recti muscles. He has thus anchored the uterus 67 times and claims many advantages for the operation: a single incision through which pelvic complications may also be treated; the strong uterine end of the ligament is utilized; there is no vesical irritation or dysuria or interference with the normal mobility of the uterus, no sutures in the fundus to irritate the uterus, absence of tendency to hernia, no encroachment of the bladder or abnormal shortening of the ligament, and the fixation is extraperitoneal. The danger of operation, he thinks, is about equal to that of exploratory abdominal incision.

45. **Difficult Breech Presentations.**—This article considers only those cases in which one is confronted by a difficult, but not impossible, breech presentation. Such is most often seen in primiparæ, where the child is disproportionately large because the mother's pelvis is slightly contracted or the child is unusually large; it may also occur in any case where the cervix, vagina, and perineum are unyielding; or even in multiparæ when the child is disproportionately large. It includes original breech presentations, and those changed into breech by version. Labor is allowed to progress as usual until the breech is nearly to the pelvic floor; that is, until the child is sitting on the recto-vaginal septum. The patient is placed in the dorsal position and anesthetized profoundly. The child is then pushed carefully upward and both feet brought down, the possession of both feet giving the operator better control of the child. With the child's thighs in the cervix, dilate with the hand until the cervix is practically paralyzed; meanwhile dilate the vulvar orifice and vagina fully with the hand and closed fist, the success of this method being dependent on the thoroughness of the dilatations. During these dilatations gradually withdraw the chloroform. See that the cord is out of the way. Grasp the feet and draw the child slowly down until the umbilicus is nearly to the mother's vulva, while the assistant, or operator's own hand, if necessary, keeps the head well flexed so as to avoid extension and consequent catching at the pelvic brim. The operator then makes strong traction while the assistant presses down on the head firmly; if the woman is sufficiently aroused from the anesthetic, instruct her to expel the child with all her strength. The head then passes down the parturient canal, escaping the grasp of the cervix uteri, a little rotation of the child's hips, or side-to-side pull, serving to deliver the child to the shoulders. The arms and shoulders are then quickly delivered, delivering the posterior arm first, then rotating and delivering opposite arm (following the method well described on page 786 in Hurst's Obstetrics, 3d edition). The assistant then takes the child while the operator quickly delivers the head with forceps. The advantages of this method are: 1, the time of the labor is shortened; 2, there is little or no laceration of the mother, and 3, the child is neither strangulated nor mutilated because of being caught by the cervix or perineum.

46. **Puerperal Eclampsia.**—The treatment advised by Stewart is avoidance of noise, excitement and alarm, using hot packs to excite perspiration, frequent small venesections if necessary. He also notices the possible advantages of using irrigations of normal salt solution. We should carefully lower the amount of nitrogen in the food and increase the aggregate of its discharge, and in this way we have gone a long way in the prophylaxis of the condition.

Brooklyn Medical Journal.

February.

47 *Hookworm Disease—A Newly Recognized Factor in American Anemias. Charles W. Stiles.
48 Infant Diarrheal Mortality in Brooklyn—Its Cause and Preventability. Louis C. Ager.
49 Note of a Case of Gunshot Wound of the Neck. G. R. Fowler.
50 Report of a Case of Laceraton of the Subclavian Artery from a Fractured Clavicle. Wm. E. Butler.
51 Memorial Address, Kings County Medical Society. James P. Warbasse.
52 A Case of Puerperal Psoitis. A. M. Judd.
53 The Overindulgence in Fluid as an Etiological Factor in the Production of Stomach Disorders. Hugh E. Rogers.

47. **Uncinariasis.**—Stiles points out the differences between the American and cosmopolitan form of uncinariasis, and remarks as to the economic importance of the disorder as it occurs in the South, especially in sandy regions. The great point is to instruct country physicians as to the disorder itself, and to educate the rural population is the best means of prophylaxis, preventing infection from drinking water polluted by dejecta, etc.

Annals of Surgery, Philadelphia.

February.

54 *An Operation for the Radical Cure of Aneurism Based upon Arteriorrhaphy. Rudolph Matas.
55 *Cases Illustrating Some Important Points in the Diagnosis and Treatment of Abdominal Contusions Associated with Visceral Injuries. George E. Brewer.
56 Intraperitoneal Rupture of the Bladder. Daniel F. Jones.
57 A Case of Pancreatic Cyst, with Remarks on the Pathology and Surgical Treatment. Charles G. Cumston.
58 *The Question of Surgical Intervention in Cases of Injuries to the Spine. John C. Oliver.
59 *Post-Typhoidal Infection of Ribs. J. Shelton Horsley.

54. **The Radical Cure of Aneurism.**—Matas describes in detail the methods of treatment of aneurism, with illustrations, and in conclusion submits in substance the following conclusions: 1. That the recognized advantages of the radical operation for the cure of aneurisms in the peripheral arteries as shown by recent statistics, can be greatly increased. The sphere of the operation can be broadened by the adoption of the method of suture and obliteration of the sac instead of the classic ligation of the arteries, with or without extirpation, as hitherto practiced. 2. That the closure of the arterial orifices which supply the aneurismal sac, whether single or multiple,

by means of suture, and within the sac itself, greatly simplifies the technic of the radical operation and is a reliable means of securing hemostasis. 3. That in favorable cases such as saccular aneurisms with a single orifice communicating with the lumen of the larger arterial trunks, it is possible by careful suture to obliterate the aneurismal opening without obstructing the lumen of the parent artery, thus lessening the risk of gangrene. 4. It is also possible in favorable cases of fusiform aneurisms of traumatic origin, and in those in which the sac material is pliable and healthy, to restore the lost continuity of the artery by building a channel which will connect the two main orifices of communication and restore the interrupted circulation in the parent vessel. This can be done by utilizing the sac in the manner described by the author. 5. The fear that atheroma and other degenerative changes will interfere with the healing and repair of the arterial tunics has been greatly exaggerated, as shown by abundant experience of the aseptic period in the ligature of sclerotic arteries in continuity, in the absence of secondary hemorrhages in the amputated stumps of the aged, diabetic, and other arterially diseased subjects, and is still more fully demonstrated by the statistics of Delbet, Kubler, Ransohoff and others who have reported numerous successful results in spontaneous as well as in traumatic aneurisms. 6. The fallacy and dangers of the old operation of Antyllus lie, first, in the fact that the preliminary ligation of the main artery above and below the sac does not always control collateral bleeding, hence compels a more or less extensive dissection of the sac out of its bed as one of the necessary features of the procedure to include all the collateral vessels; the difficulties of the operation are increased and the vitality of the limb is endangered by interfering with the collateral circulation. Another serious objection to the old Antyllian operation is that the sac is allowed to remain as an open cavity in the bottom of the wound, where it is packed or drained and allowed to heal by granulation, thus inviting infection, suppuration and secondary hemorrhage. All this is obviated by the author's method of endoaneurismorrhaphy, which does not disturb the sac from its vascular connections and favors its prompt obliteration by suturing the infolded walls of the sac, and keeping them in direct and close approximation. 7. The dangers and uncertainties of extirpation of the sac are often more apparent because, in addition to the technical difficulties, there is the great risk of injury to the accompanying satellite veins and nerves which blend most intimately with the sac and often compel the surgeon to make his operation a partial one. The greatest objection, however, is in the interference with the collateral circulation, which entails a considerable risk of mortification in the distal parts. All these dangers are reduced to a safe minimum, and are largely eliminated by simply obliterating the sac, instead of extirpating it.

55. **Abdominal Contusions.**—Brewer notes the possibilities of abdominal contusions in the way of rupture of the viscera, liver, spleen, bladder, etc., and considers that in the earliest stages of abdominal injury, pain, tenderness and muscle rigidity are the most prominent and reliable signs. Their association is almost pathognomonic of peritoneal irritation. In the absence of spontaneous pain, localized tenderness with rigidity is strongly suggestive of visceral injury. Muscular rigidity, however, is the most reliable and sometimes the only sign. Spasm of one or more of the abdominal muscles following a traumatism may be looked on as Nature's efforts to protect the injured organ from further irritation. Vomiting is occasionally present, but is not always an accompaniment. The occurrence of free fluid in the peritoneal cavity, shown by the different percussion signs in different positions, is valuable. The presence of a large amount of fluid feces in the colon may rarely lead to error. Their specialized diagnosis, Brewer considers, is rarely possible. He reports a number of cases illustrating the points which he has brought out. He favors the treatment of extensive fractures of the spleen by pressure and gauze packing rather than by splenectomy. This is also applicable to the liver. It gives less shock, saves time and preserves an important organ. Speed of operation, perfection of technic and the ability to administer at any moment the most vigorous stimulants are the most important requisites of success. The assistants should be prepared to give saline infusions at the time the peritoneal cavity is opened.

58. **Injuries to the Spine.**—Oliver holds that it is proven that complete transverse lesion of the cord is hopeless, and asks if a correct diagnosis of such can be made. He reports cases as showing the utility and effects of operation. On the whole, his opinion seems to be favorable to delay in operating in cases of spinal injuries. It gives them a chance for spontaneous recovery or improvement.

59.—See abstract in THE JOURNAL, XXXIX, p. 1410.

Albany Medical Annals.

February.

60 Dr. Lorenz's Clinic in New York, December 18, 1902. Charles E. Davis.
61 *Infantile Diabetes Mellitus. Howard E. Lomax.
62 *Surgery of the Stomach, with Report of Cases. Albert Vander Veer.
63 *Therapeutic Effects of Roentgen Rays on Malignant Growth; Report of Cases. Arthur F. Holding.

61. **Infantile Diabetes Mellitus.**—Diabetes in children has not an extensive literature, but seems to be pretty thoroughly reviewed by Lomax, who describes the symptoms and reports cases. He discusses the general subject of diabetes, its pathology, etc., and remarks that no recoveries from infantile diabetes have been recorded. The cases reported varied from 2 to 16 years of age. One case in an adult was also mentioned. Some benefit seems to be derived with occasional fasts for twenty-four hours or so in removing unfavorable symptoms for the time being.

62. **Surgery of the Stomach.**—Vander Veer discusses surgery of the stomach, and reports two cases of complete removal of the organ, one of which was successful.

63. **Roentgen Rays.**—Holding reviews the cases published in the literature of malignant growths treated by this agency and reports personal observations of a number. He thinks that, from the uniformly good results reported, we may be too sanguine as regards the beneficial effects of the rays in malignant tumors. There are probably unsuccessful cases that are not reported.

Annals of Gynecology and Pediatry, Boston.

February.

64 *The Roentgen Ray in Gynecology. Eden V. Delphey.
65 Report of a Case with Autopsy. Loren A. Sanders.
66 *Further Report on the Use of Ethyl Bromid as a Primary Anesthesia to Ether. Emery Marvel.
67 *Portal Anastomosis, with Report of a Case. Daniel H. Craig.

64. **The Roentgen Ray in Gynecology.**—Delphey finds that the *x*-ray has a somewhat lesser value in the diagnosis in gynecologic conditions, and is principally useful in the treatment of malignant neoplasms.

66. **Ethyl Bromid Anesthesia.**—Marvel finds the advantages of using ethyl bromid anesthesia as a preliminary to ether anesthesia over that of the administration of ether alone, are the lesser time required, reduction of the discomfort to the patient taking ether by the absence of bronchial irritation and increased mucous secretions, less excitement and the danger of injury to which the first stage of ether narcosis is liable, the smaller quantity of ether required, more rapid regaining of consciousness and the lessened tendency to postanesthetic vomiting. He has employed the method in 33 cases since the former report which he made, and 30 of these were celiotomies. The time required to secure unconsciousness varied from ten seconds to two minutes, an average of twenty-five seconds.

67. **Portal Anastomosis.**—The case reported by Craig seemed to be completely relieved by the Talma-Morrison operation, which is described. The technic was somewhat different from that ordinarily used. The lower extremity of the omentum after having been some time exposed to the air and rubbed with a dry gauze sponge, was tucked down into the sulcus formed by separating the peritoneum about two inches in all directions, being placed thus between the outer surface of the peritoneum and the muscle. Six catgut sutures were used to secure the end of the omentum within this pocket to the

abdominal parietes. The peritoneum was closed about and above the omentum with interrupted catgut and the sutures and abdomen closed in three layers. Multiple adhesions between various organs and parietes seemed unnecessary and by making an incision in the lower half of the abdomen, instead of the upper half, the physiologic function of the omentum of protecting the intestines was preserved and equally efficient adhesions secured.

Indiana Medical Journal, Indianapolis.

February.

68 Recent Evolution in Medical Education and the Intellectual Status of Medicine. Theodore Potter.
69 *Fracture of the Zygomatic Arch. G. W. H. Kemper.

69. **The Zygoma.**—Kemper reports a case where a young man was injured in the game of football, showing fracture of the zygoma. He replaced the bone with the index finger in the buccal cavity, using his thumb also and crowding the end of the bone upward and behind the process. He finds that this method of replacing is a novelty not mentioned in textbooks or it is stated that it can not be thus replaced, and an incision and blunt hook under the skin are advised.

Journal of the Michigan State Medical Society, Detroit.

February.

70 *Mosquitoes and Malaria—The Present Knowledge of Their Relations. George Dock.
71 A Case of Absence of the Rectum. W. P. Manton.
72 Malnutrition in Infants. Charles Douglas.
73 The Treatment of Apoplexy. Charles W. Hitchcock.
74 The Diagnosis of Aneurism of the Aorta. P. M. Hickey.
75 *The Causes and Treatment of Asthma. Charles H. Baker.
76 Modern Diagnosis. P. S. Root.

70. **Mosquitoes and Malaria.**—Dock describes the life history of the infecting mosquito and gives his experiences in search of the anopheles in the neighborhood of Ann Arbor.

75. **Asthma.**—Baker holds that asthma is a reflex disorder primarily due to nasal pressure, intermittent or constant, occurring in a patient of neurotic temperament, and relieved in most cases by removal of this pressure. He is, therefore, dependent on surgery rather than on drugs for the treatment of this condition.

American Journal of the Medical Sciences, Philadelphia.

February.

77 *Diseases of the Pancreas. John B. Deaver.
78 Tropical Abscess of the Liver, with Report of a Case. Solomon Solis Cohen and John H. Gibbon.
79 *A Study of Some Cirrhoses of the Liver. Beverley Robinson.
80 A Case of Multiple Melanotic Sarcoma Unsuccessfully Treated by X-Rays. James P. Marsh.
81 *Mixed Tumors of the Thyroid Gland. Leo Loeb.
82 *The Pathology of Labial and Nasal Herpes and of Herpes of the Body in Acute Croupous Pneumonia, and Their Relation to the So-called Herpes Zoster. William T. Howard, Jr.
83 *An Experimental Study of Lithium. Clarence A. Good.
84 *Ureteritis in the Female. Edgar Garceau.
85 Gonorrheal Vulvovaginitis in Children. Richard F. Woods.
86 Memoir of J. M. Da Costa, M.D. Mary A. Clarke.

77. **Diseases of the Pancreas.**—Deaver's article is a complete review of the various disorders of the pancreas up to the most recent acquisitions, describing the methods of treatment, operations, etc., and quoting extensively from the literature. In conclusion Wilbert gives some data as regards *x*-ray findings with the pancreas and it appears that it is possible to note decided changes in the organ.

79. **Cirrhoses of the Liver.**—The views ordinarily held in regard to hepatic cirrhoses are, according to Robinson, not always correct. The facts do not justify the gloomy prognoses that have been so generally given to these affections. There are different forms and degrees and not all are alike serious. He describes the different forms, atrophic, hypertrophic, and syphilitic. The former he claims are in reality of long duration as their earlier stages are not recognized. The imperative thing to do is to absolutely shut off alcohol. In the hypertrophic form he holds that the typical Hanot's cirrhosis must be rare. He does not recall a single typical case in his observation. Ascites is not the rule, but jaundice is, and in these respects it differs markedly from the atrophic type. The causation of this form of hepatic cirrhosis is obscure; the spleen often being enlarged, a malarial origin is sometimes suspected. Syphilitic cirrhosis resembles sometimes one and sometimes the other form. There may be ascites, jaundice or both together, or neither may occur. He holds that there is little doubt as to hypertrophic and atrophic alcoholic cirrhoses being distinct forms of disease and not different types of the same. In one the lesion is markedly multilobular, in the other it is monolobular in quite a pronounced degree. As Fagge has shown, cirrhosis often becomes quiescent before it reaches its final stage, and Flint seems to corroborate this view. The prognosis is far better in the hypertrophic and syphilitic than in the atrophic form. In conclusion, he speaks of surgery, Talma's operation more particularly, and reports a number of cases of this "omental anastomosis."

81. **Mixed Tumors of the Thyroid Gland.**—Loeb summarizes in substance as follows: Mixed tumors of the type of carcinosarcoma have been found in both man and animals. All have some characteristic point in common. Although carcinosarcomata occur elsewhere, the majority of them are found in the thyroid. They are also found in the thyroid in combinations of new-formed bone and sarcoma. The facts that have been cited in favor of the embryonic origin of mixed tumors can not be applied in the case of these. That a tumor is a mixed tumor is not in itself sufficient to prove its embryonic origin. It is not possible to determine with certainty, from the character of the constituent parts of a mixed tumor, from what kind of embryonic cells such a tumor is derived. Heterotopic tumor formations need not necessarily be produced by displaced blastomeres.

82. **Herpes Zoster and Pneumonia.**—Howard reports cases illustrating the relations of herpes zoster and pneumonia, and concludes that zoster is a pathologic condition like pneumonia, with definite lesions of certain sensory ganglia, sensory nerves and the skin, capable of being excited by a variety of causes. It is probable that the primary ganglionic lesions are commonly due directly or indirectly to the soluble toxins of various micro-organisms. The skin lesions may be on the head, neck, trunk or extremities, corresponding to the gasserian and posterior root ganglia affected. Various forms can be distinguished: 1. Spontaneous or primary herpes thought by Head, Carpenter and others, to be a specific infectious disease, the specific causal agent of which has a special affinity for certain sensory ganglia (posterior, spinal and gasserian). 2. Herpes occurring after certain definite toxic agents, as arsenic and carbonic oxid gas, etc. 3. Herpes in the course of certain infectious diseases like pneumonia, cerebrospinal meningitis and probably malaria and typhoid. In all three of these forms, the ganglia and the skin lesions are the same and the processes presumably identical. 4. Herpes simplex so-called, affecting the lips and nose in coryza, gastrointestinal intoxication, etc., and genitals (herpes genitalis) has not been sufficiently investigated to be classified; no evidence for or against its connection with changes in the nervous system exists. As far as skin changes in herpes are concerned, they are illustrations of particular forms of necrosis and inflammatory reaction, and, as in similar lesions in other organs, can probably be excited in a variety of ways. 4. Herpes should be classified according to its relation to changes in the nervous system, and every opportunity embraced to extend our knowledge in this direction.

83. **Lithium.**—From clinical data and a series of experiments on cats and dogs, Good offers the following conclusions:

1. Lithium is excreted in the saliva, into the stomach and bowel, and in the urine. The greater amount is excreted in the urine, though more appears in the stomach and bowel when nausea, vomiting, and diarrhea have been profuse. It can usually be demonstrated in the secretions within ten minutes after a hypodermic injection, though its excretion proceeds slowly, for I have found it in the secretions twenty-three days after the injections were stopped. 2. Lithium salts given to animals, hypodermically or by the stomach, cause, sooner or later, fatal gastro-enteritis. This gastro-enteritis, is, undoubtedly, connected with the excretion of the metal through the bowel wall. 3. Lithium salts do not possess any diuretic action that can not be accounted for by their salt action. They render the urine alkaline, and thus act like other alkalies. 4. Lithium carbonate, in fifteen to twenty-grain doses, and lithia tablets have been known to cause gastro-intestinal symptoms in man. 5. Dilute solutions of lithium salts are not solvents for uric acid or urates.

84. **Ureteritis in the Female.**—Garceau's article is a complete study of ureteral disease as it appears in the female. He classifies it as simple ureteritis of the acute or chronic form, ureteritis with obstruction and tubercular ureteritis. In

the former he notices particularly one sign of great diagnostic importance, that is, an excess of desquamated epithelium which may or may not be associated with the presence of pus on the affected side. He thinks the gonococcus the germ to be chiefly dreaded, and points out the diagnostic and clinical symptoms. There is one affection which may be confounded with it, that is ureteral stricture; but as stricture is a sequel of the disease, and as ureteritis always accompanies stricture, the distinction is not marked. If a stricture is suspected passing a graduated bougie will clear up the diagnosis. Most frequently simple ureteritis is not recognized at all or is treated as a chronic cystitis or as a reflex bladder trouble. Cystoscopic examination is always advisable. The prognosis is bad if it has existed a long time. As to treatment, he recommends a non-stimulating diet, attention to the secretion of the skin, moderate exercise, regularity of living, use of drugs to modify the acidity of the urine and sometimes as disinfectants and topical applications to the bladder, a solution of 5 to 10 per cent. nitrate of silver. He illustrates the apparatus he has himself devised for topical applications to the ureter itself, consisting of a fine silver tube with a blunt-pointed extremity and a bulbous expansion a short distance from its end. This is introduced into the ureteral orifice as far as the bulb permits, and the bulbous expansion held here in close contact to prevent regurgitation of liquid. Then the silver is injected. He has only used this a few times and it is too early to say what the results will be of this method of treatment. Ureteritis with obstruction is discussed at length. It is a long-standing affection and very difficult to cure. The danger is on the part of the nervous system, which is constantly irritated, the mental equilibrium being often more or less disturbed. A constant nagging desire to urinate is felt. Treatment generally has for its object the restoration of the caliber of the lumen. He speaks with some reserve as regards dilatation methods. They are extremely painful and the patient does not always submit. The best operation is one which exposes the ureter through the extraperitoneal incision, after preliminary introduction of a ureteral catheter. The stricture may then be cut on the catheter and the two angles of the incision united by means of fine suture. The sewing should not be done until the rest of the canal has been explored for high strictures. If the stricture is of great length and near the bladder, it is advisable to transplant the ureter. Any stricture below the pelvic brim can be treated in this way. If there is a high stricture the only other resource is a nephrectomy or the establishment of an artificial loin fistula. The condition of the opposite kidney should always be considered. Calculous obstruction is noticed and cases reported. The prognosis in ureteral obstruction depends on the length of time it has lasted and whether infection of the upper urinary passages has taken place. Tubercular ureteritis receives but comparatively brief mention at the end of the article. He gives a tabulated statement of the cases and the results of operations including those in which the ureter has been abandoned, and it appears that complete recovery can take place even if this is the case. If the ureter is abandoned, however, further complications may be expected. The most to be dreaded is tuberculosis in some other part of the body. He thinks nephro-ureterectomy will be more commonly done in the future than in the past, and total nephro-ureterectomy should be done in all cases where the condition warrants it.

Carolina Medical Journal, Charlotte, N. C.

February.

87 Report of Two Successful Cases of Rectopexy or Suspension of the Rectum upon the Sacrum. S. T. Earle.
88 Sebaceous Cyst—Ostitis Deformans—Laminectomy. William L. Rodman.

American Practitioner and News, Louisville.

November 15, 1902.

89 On the Prevention of Infectious Diseases. (To be continued.) E. J. Kempf.
90 A Plea for More Careful Study of Diagnosis. B. F. Frazier.
91 The Most Practical Organization for the Medical Department of the United States Army in Active Service. (Continued.) Thomas Page Grant.
92 Typhoid Fever—Its Treatment. R. E. Garnett.
93 Differentiation of Varicella and Variola. Ewing Marshall.
94 Report of a Case of Articular Rheumatism with Peculiar Heart Action. H. S. Taylor.
95 Typhoid Fever, with Rare Complications. T. H. Garvin.
96 Obscure Case of Intestinal Obstruction. B. F. Fyke.

Northwestern Lancet, Minneapolis.

February 15.

97 The Early Clinical Manifestations of Pulmonary Tuberculosis. J. W. Bell.
98 Gonorrhea in the Female. George C. Barton.
99 Unequalized Sexual Sense and Development the Great Cause of Domestic Infelicity and Nervousness in Women. C. W. Malchow.

Iowa Medical Journal, Des Moines.

February 16.

100 The Diagnosis and Treatment of Round Ulcer of the Stomach. Arthur R. Edwards.
101 The Therapeutic Use of the X-Ray. D. C. Brockman.
102 The Public School—Its Environment, Hygienic Conditions, etc. L. J. Bowman.
103 Strabismus—Its Causes and Treatment. M. F. Patterson.
104 Some Coughs Which Are Not Benefited by Cough Mixtures or Expectorants. B. C. Kelley.
105 Scleroses of the Spinal Cord. Clifton Scott.

Washington Medical Annals.

January.

106 The Treatment of Typhoid Fever. G. Wythe Cook.
107 Fibroma of Uterus; Hysterectomy; Softening of Brain; Death. D. Percy Hickling.
108 History of Dr. Walter Reed's Illness from Appendicitis. W. C Borden.
109 Omphalopagus. D. S. Lamb.
110 Transposition of the Heart. J. M. B. Banister.
111 Exencephalus with Spina Bifida. DeWitt C. Chadwick.
112 Marked Elongation of the Cervix Uteri. J. Wesley Bovee.
113 Hemorrhage in Left Lenticular Nucleus with Left Ptosis; Otherwise Right Hemiplegia; Origin Probably Embolic. D. S. Lamb.
114 Appendicitis from a Physician's Standpoint. E. Castelli.
115 Clinical Notes of Some Interesting Cases (Menstrual Epilepsy, etc.) Henry D. Fry.
116 Case of Gangrene of Scrotum in an Infant. J. Ford Thompson.
117 Case of Carcinoma of Bladder. Francis R. Hagner.
118 Address, Medical Society of the District of Columbia. Samuel S. Adams.

St. Louis Courier of Medicine.

February.

119 Report of a Case of Chorioma. H. S. Crossen.
120 Pathological Report, with Some General Remarks on Chorioma. Carl Fisch.
121 A Case of Anthrax. H. L. Nietert.
122 Bacteriologic Report. C. A. Snodgrass.
123 Some Observations on Scarlet Fever. Philip Newcomb.
124 A Case of Hydrophobia. John Zahorsky.
125 A Case of Syphilis Tarda. M. J. Lippe.
126 Calcium Chlorid in Typhoid Fever. J. R. Clemens.

Occidental Medical Times, San Francisco.

February.

127 Intracranial Neurectomy, Including Part of the Gasserian Ganglion, for Trigeminal Tic. Harry M. Sherman and Leo Newmark.
128 Leucoplasia of the Tongue During Secondary Syphilis. Douglass W. Montgomery.
129 Report of Cases of Acute Lacunar Tonsillitis, with Skin Eruptions. Ray L. Wilbur.
130 Cavernous Angioma of a Voluntary Muscle and Sarcoma of Axilla, Recurring After Seventeen Years. W. S. Thorne.
131 Hysteria. J. O. Hirschfelder.
133 Purpuric Menorrhagia. David Hadden.
134 Results of Urinary Analysis in a Series of Postmortem Examinations, with Reference to the Conditions of the Kidneys of the Same Cases. Wm. Osmers.
135 Are Ventrofixations and Ventrosuspensions of the Uterus Justifiable Operations? H. Kreutzman.

Medical Summary, Philadelphia.

February.

136 Preventive Medicine in Regard to Custom. E. J. Kempf.
137 Herpes Zoster—Impetigo Herpetiformis—With Cases Cited with Treatment. John R. Smith.
138 A Plea in Behalf of Suffering Humanity. C. W. Canan.
139 The Common House-Fly and Typhoid Fever. Charles P. McNabb.
140 Is Spermatorrhea a Myth? C. E. Boynton.
141 Typhoid Fever. G. O. Smith.
142 Singular Remedies. Silas Hubbard.

Proceedings of the Pathological Society of Philadelphia.

January.

143 Angiosarcoma of the Hypophysis Cerebri without Acromegaly. Joseph McFarland.
144 A Fatal Case of Anthracosis, with Autopsy. Thomas S. Githens.
145 Atrophic Cirrhosis of the Liver. Solomon Solis Cohen and David Riesman.

The Post-Graduate, New York.

February.

146 Prophylaxis in Children. Andrew Von Grimm.
147 A Study of the Typhoid Cases Treated in the Hospital Wards During the Past Two Months. Edward Quintard.
148 Clinical Lecture on an Interesting Cardiac Case Previously Diagnosticated as Tuberculosis. William H. Porter.
149 The Telephone as an Aid to Hearing. D. B. St. John Roosa.
150 Notes from the Clinics. Bryan D. Sheedy.

Chicago Medical Recorder.
February 15.

151 Cutaneous Affections in Relation to Life Insurance Examinations. Joseph Zeisler.
152 The Treatment of Progressive Deafness Based on Differential Diagnosis. J. Holinger.
153 A Case of Spina Bifida without a Sack. A. R. Small.
154 New X-Ray Tube. J. Rawson Pennington.

Bulletin of the American Academy of Medicine, Easton, Pa.
February.

155 Children in Cities. Rosa Engelmann.
156 Good Vision an Important Factor in the Educational Process. S. D. Risley.
157 *The Family Physician of the Past, Present and Future. S. A. Knopf.
158 The Physician as an Accountant. Charles M. Culver.
159 Pure vs. Applied Science in Medicine. Winfield S. Hall.
160 State Aid to Medical Colleges. Charles McIntire.

157.—This article has appeared elsewhere. See THE JOURNAL, xxxix, ¶6, p. 862.

Nashville Journal of Medicine and Surgery.
January.

161 Myomectomy. R. E. Fort.

Medical Times, New York.
February.

162 A Clinical Study of Insanity and Nervous Cases. Wm. Magaziner.
163 Points in Heart Disease. M. Shellenberg.
164 The Study of Certain Obstetric Conditions. A. C. Griggs.
165 The Treatment of Insomnia. G. R. Reynolds.
166 The Relation between Chorea and Rheumatism. H. M. Haywood.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.
February 14.

1 *Unsuccessful Operations for Cancer of the Tongue and on the Early Diagnosis of the Disease. H. T. Butlin.
2 *Study of Cancer Mortality. Charles Templeman.
3 Two Cases of Carcinoma of the Liver Presenting Several Points of Clinical and Pathological Interest. Herbert R. Vachell and W. Mitchell Stevens.
4. Case of Primary Carcinoma of the Ovary. May Thorne.
5 A Case of Primary Sarcoma of the Lung, Simulating Empyema, with Remarks on the Nature of Primary Malignant Disease of the Lung. H. D. Rolleston and R. S. Trevor.
6 Scirrhous Carcinoma of the Male Breast. W. Blair Bell.
7 An Unusually Large Angioma of the Liver. Alfred Mantle.
8 A Case of Prolapse of the Bowel with Loss of Control. Stephen Paget.

1. **Cancer of the Tongue.**—In a former article Butlin has given his results, which show that success in the operative treatment of cancer of the tongue is much greater than had been supposed. He has in his present paper brought together all the results of his experience. Out of 129 cases, 32 may be regarded as absolute successes. If we take away all the cases that died of other diseases after the operation, the total is then 32 to 117 cases, or nearly 27 per cent. If he had exercised greater care in the selection of cases the percentage might have been still higher, but the rule has been to operate whenever there has been the smallest chance of relieving the patient; still he thinks he could reduce his mortality considerably in a future series of equal numbers. He reviews the predisposing causes of cancer, particularly the cracks, fissures, ulcers and other lesions of the tongue which form the basis for cancerous growths. Carcinoma may begin in almost any form, a little warty growth, patch of leukoplakia, etc. He says he has asked himself over and over again why physicians watch these dangerous conditions for weeks and months until cancer is fairly established without action. He accounts for it by the lack of knowledge of the actual pre-cancerous condition and the prejudice against operations on the tongue on the part of the patients—the fear that it will destroy the power of speech. The last is needless, as he has shown, for with any considerable portion of tongue being left, the ability to speak is retained. He says in the first place if we are consulted about warts or warty growths, particularly of the tongue, no time should be lost in removing them. In the case of indolent ulcers, caused by the decay of teeth or any such cause, the cause of irritation should be removed at once, and if the ulcer does not then heal, cut it out. He has often advised in cases of superficial glossitis where the tongue was constantly irritated, to have that part removed even when there is no sign of any pre-cancerous condition. He gives that advice, particularly when the under surface of the tongue is healthy, so that it can be used as a flap.

2. **Study of Cancer Mortality.**—Statistics of the town of Dundee are analyzed by Templeman and he finds as a summary the following:

1. That the death-rate from cancer as a whole during the twenty-five years under review has more than doubled, having increased from 7.27 to 16.92 per 10,000 of the population over the age of 20. 2. That this increase is greatest at ages over 45, is common to both sexes, but more marked in the male sex, though the actual mortality is higher among females. 3. That in females this is chiefly due to an increase in malignant affections of the abdominal viscera. 4. That uterine cancer and cancer of the breast in females have increased, though not in any marked degree. 5. That cancer of the rectum also shows a slight increase in both sexes. 6. That in males the highest mortality is from cancer of the abdominal viscera. 7. That in males cancer of the mouth and upper digestive tract has also greatly increased. 8. That, therefore, cancer of regions which may be described as "accessible" has increased, as well as that of parts which are not accessible, and where the diagnosis is more difficult, but the increase in the latter is out of all proportion to that in the former class. 9. That during the same period there has been a great improvement both in clinical and pathological diagnosis, as well as in death certification, and consequently a considerable diminution in returns from such indefinite conditions as "old age" and "disease" of the various organs (without any specification of its nature). 10. That this must to a considerable extent have helped to swell the returns of death from "cancer."

He does not think the facts here stated absolutely account for the great increase in cancer mortality, which is the fact, and a substantial one, though not so alarming as the general public believe or some recent statements have intimated. It is difficult to assign any special cause to the increase. Before we can solve the problem of increased cancer, we must have some more accurate knowledge of its etiology, and if parasitic in its nature, we must know something of the life history of the organism that caused it.

The Lancet, London.
February 14.

9 *Fibroids of the Uterus and Its Ligaments Considered from a Clinical and Surgical Standpoint. Alban H. G. Doran.
10 *Certain Principles and Methods in the Surgery of the Paralysis of Children. Robert Jones.
11 Lunacy and the Law: The Care and Treatment of Persons of Unsound Mind in Private Houses and Nursing Homes. Ernest W. White.
12 Notes upon a Case Where Symptoms of Early General Paralysis of the Insane Followed a Head Injury; Trephining; Removal of Depressed Bone; Disappearance of the Symptoms. A. M. Shield and T. Claye Shaw.
13 A Method of Examining the Pulmonary Apex. A. G. Auld.
14 A Rare Form of Purpura. H. Laing Gordon.
15 A Case of Appendicitis with General Peritonitis. W. Greenwood Sutcliffe.
16 Hemorrhage in Pregnancy: A Case of Central Placenta Previa. H. T. M. Whitling.
17 Note on "Relapses" in Scarlet Fever. A. Bankier Sloan.
18 A Case of an Unusual Number of Gallstones; Cholecystotomy; Recovery. C. A. S. Ridout.
19 A Case of Compound Comminuted Fracture of the Skull with Hernia Cerebri; Operation; Recovery. Llewelyn Lewis.

9. **Uterine Fibroids.**—The question as to the retention of certain parts of the ovary in case of hysterectomy is mentioned first in this lecture by Doran. While this conservative plan has its merits, he thinks they have been overestimated. He analyzes his own cases and finds that there are certain questions to be answered in regard to it: 1. Whether the period always ceases after hysterectomy with removal of both ovaries; 2, if their removal really involves bad menopause symptoms; 3, if when more or less is left of the ovaries, the period will continue regularly, and lastly, if this preservation of the ovaries be wholly beneficial. In his 25 cases where both ovaries were removed the period ceased, with only four exceptions; in one it appeared once in six months; in one it appeared irregularly thirteen months after operation; in one it was kept up for two years, and in the fourth for two years and seven months. The second question is closely associated with the first, does removal of the ovaries necessarily cause these bad symptoms? In 21 cases, those where the menopause was complete after removal of both ovaries, there were no symptoms whatever in seven, mild and infrequent flushing in seven, and severe symptoms in seven. In six of the last seven there were simply the usual subjective evidences of change of life, severe enough to give discomfort. The seventh developed symptoms of persecutory mania a few months after the operation, but this was merely a repetition of a former attack, and

he does not attribute too much value to it. We must not be too ready to put the blame on the operation. Marked corpulence developing rapidly was noted in two cases, one of 30 and one of 50 years. He thinks from the results that it is best to leave one or both ovaries if healthy, the more so since it involves a smaller wound, but he does not consider retention of the ovaries a matter of supreme importance and does not guarantee the patient against a severe menopause. The question whether the period remains regular after hysterectomy when more or less is left of the ovaries, was answered in his experience by the fact that in nearly 53 per cent. the period did not appear after operation and in 5 of the 9 the menopause was distinctly severe. The question as to the retention of a portion of the uterus above the cervix, which is insisted on by Abel and Zweifel, though rejected by Kelly, is mentioned and Doran's own experience to a certain extent supports the Abel-Zweifel theory. As to the question whether leaving the ovaries or sparing one ovary is harmful or not, he points out that inflammation may occur, but the most serious matter is their possibility of its becoming the seat of tumor. The question as to previous hemorrhage has to be taken into account also, but he can not draw any conclusion. According to Doran's experience the family history of fibroids is more interesting than important. It sometimes is detected, but is not a sound guide to the prognosis and treatment. The questions of the diagnostic importance of hemorrhage and the occurrence of ascites are also discussed and the author thinks that the latter subject at least deserves more attention than it has received. He is inclined to doubt the occurrence of absorption of fibroids, though there is no doubt that they sometimes vanish. The process which brings about this result, he holds, is probably necrosis or aseptic necrobiosis not rare in fibroid tumors; the source of nutrition fails and the fibroid softens and disintegrates. This necrosis of fibroids is a matter of great clinical interest, especially if septic. It usually produces a certain amount of disturbance of health and may lead to trouble. While the condition may justify hysterectomy it is not always advisable to urge the removal of a small fibroid on the plea that it may become necrotic. Impaction of fibroids in the pelvis, the "cup and ball" fibroid is also mentioned and the relation between fibroid uterus and disease of the appendages. It does not always follow that the imbedding of the ovaries in soft peritoneal adhesion with congested tube require their sacrifice. Necrotic fibroids do not necessarily affect the appendages, whether they are originally septic or not. The infection is more often derived, he thinks, from the contents of the uterine cavity.

10. **Paralyses of Children.**—Jones criticises the neglect of orthopedic surgery on the part of physicians; there is a tendency to turn their patients over to the instrument makers, and this has been too much the practice in England. He insists on the importance of working on the muscles, stretching and lengthening the flexors in acute infantile paralysis and putting the extensors in such a position that their structural shortening will ensue. We must not confuse muscles which for years have been useless with muscles that are positively paralyzed. The operations of tendon transplantation and arthrodesis are also noted in relation to spinal paralysis. The nearest efficient tendon should be employed if sufficiently strong rather than one from a distance and the selection should be made, if possible, of a re-enforcing muscle the mass of which is parallel to the re-enforced. If the tendon is to be spliced by tendon, it should be done as near its insertion as practicable, to avoid as much as possible a yielding of the paralyzed section, which is apt to occur. If possible to transplant into the periosteum he has found that the best way. The proximal part of the re-enforcing tendon should be fixed into the paralyzed tendon so that it can be maintained as tense as possible, if we are to have it do its work. He describes the operation of arthrodesis, and speaks of its advantages, in flail-like joints. Cerebral paralysis of the spastic type is also discussed at length by Jones, who puts the idiot, the microcephalic, and the violent irritable type of diplegic outside of the class which can be successfully treated. The treatment of any condition short of this may be undertaken with varying success, allowing that it may require a long period. The treatment of the hand and arm in infantile hemiplegia is less promising than the diplegic cases. If the spasm is never relaxed treatment is futile. He speaks particularly of the importance of flexing the elbow superficially, hyper-extending the wrist as the dominant deformities are pronation and carpal flexion. It may be taken as a rule that the fixation of the spastic muscles in a position opposed to their contraction lessens the severity of their spasm. This is perhaps the best explanation of how the good results occur. In the later period of treatment tenotomy or tendon transplantation may be required and no opportunity should be lost in proper cases of performing tenotomy. The treatment of spastic paralysis involves operative, mechanical and educational stages. If the surgeon is not satisfied after the case has been under his care for twelve months, he would do best to leave it alone.

The Practitioner, London.

February.

20 *Address on Tuberculosis in Glasgow. T. Clifford Allbutt.
21 *Notes on Urinary Chemistry. Walter G. Smith.
22 A Lecture on Melanoma. Frederic Eve.
23 *An Operation for Incontinence of Feces Due to Relaxed or Paralyzed Sphincter Ani. A. W. Mayo Robson.
24 *Four Cases of Snap- or Trigger-Finger. Harold L. Barnard.
25 *On the Micrococcus of Acute Rheumatism. E. W. Ainley Walker.
26 *Twenty-six Cases of Sunken Nose, Treated by the Subcutaneous Injection of Paraffin. Stephen Paget.
27 *Color-Blindness in the Mercantile Marine. T. H. Bickerton.
28 A Case with Comments (Adhesive Mediastino-Pericarditis). G. A. Gibson, H. H. Bullmore and A. F. R. Conder.
29 Some Recent Work on the Etiology and Treatment of Eclampsia. W. E. Fothergill.
30 A Review of Recent Work on Ophthalmology. E. Treacher Collins.
31 The Health Aspects of London Locomotion. Louis C. Parkes.

20. **Tuberculosis.**—Allbutt depreciates the panicky fears on the part of the public and anything encouraging them, and advocates sanatorium treatment, establishment of proper vital resistance, and the precautions against the dissemination of the microbe by care of the sputum, etc.

21. **Urinary Chemistry.**—Smith reports a case in which a bulky sediment of leucin was found in the urine. He remarks that he does not know of any previously-recorded cases in which it appeared in such quantities not associated with tyrosin. The patient had simply apparent digestive disorders and a frequent desire to urinate. The second part of his article is on the reaction between urea and formaldehyd and its clinical significance. The reaction consisted in a white deposit consisting of discoid, very small oblong and oval bodies, single, or arranged in pairs, somewhaat resembling large bacteria. The chemical study of the substances lead him to formulate the following three points of practical interest as regards relation of formalin to the urine:

1. It yields with urea a white precipitate (probably methylene-urea) which might easily be mistaken for leucin. 2. If present in urine formaldehyd will reduce the copper test, and so introduces a fallacy in testing for sugar. 3. Formaldehyd interferes with the detection of small amounts of albumin by means of heat and acetic acid.

23. **Relaxed Sphincter Ani.**—The following is a description of Robson's operation which was performed for incontinence and paralyzed sphincter ani following ablation of the pils-bearing area:

With the patient in the lithotomy position, a semilunar incision was made at the junction of skin and mucous membrane around the anterior half of the anus, and this was deepened about ¼ to ½ inch. The upper and lower margins were then separated by being drawn apart by means of forceps, so as to make the semilunar slit into a lozenge-shaped cavity, and this cavity was then closed by bringing together the sides by buried catgut sutures and the skin by silkworm-gut sutures. It will be seen that the wound is entirely external to the bowel and that it diminishes the size of the anus; but it does more than merely contract the orifice, for it restores the power of the sphincter muscles.

The description is more intelligible with the schematic illustrations which he gives. The operation probably acts in one or both of two ways: 1. By shortening of the sphincter muscle, enabling it to grip the anal orifice or by bringing together the torn ends of the muscle. Whatever may be the explanation, the operation answers the purpose for which it was designed, and the patient was completely relieved of the incontinence.

24. **Trigger-Finger.**—Four cases are described by Barnard, who discusses the condition and its probable cause. The thumb seems to be most commonly affected, next the ring, the middle, the little and the index finger. The most typical cases are undoubtedly due to changes in the tendon, producing a local enlargement which snaps below the osseofibrous arch opposite the metacarpo-phalangeal joint, or, in the case of the thumb, between the two sesamoid bones and beneath the ligament which unites them. The cause of the snap, however, may be in the joint and some irregularity of the anterior surface producing the trigger action. For the treatment of those due to sudden injuries, rest on a splint with pressure from a pad placed over the swelling and later massage, appears to be the suitable and successful treatment. Where a definite nodule has been formed and persists, it is correct to expose the tendon and dilate according to what is found, either removing the mechanical obstacle or overcoming the disproportion between the tendon and its sheath. The most scrupulous asepsis must be followed.

25. **Acute Rheumatism.**—The substance of this article is largely included in that already abstracted in THE JOURNAL of February 28, ¶1, p. 609, by R. M. Beatson and E. W. Ainley Walker.

26. **Paraffin Prothesis.**—This gives in substance Paget's experience, which has been already analyzed in a former article, abstracted in THE JOURNAL of January 31, ¶4, p. 338.

27. **Color Blindness.**—Bickerton takes up this question, showing the deficiencies of present practice, the imperfections of the Holmgren test, the frequent successful appeals, which destroy confidence in the test and the necessity of examining for color sense not only the officers, but the sailors who may be put in positions of trust as lookouts, etc., where the perfection of the color perception is essential.

Journal of Tropical Medicine, London.

February 2.

32 Photographs Illustrating the Parasites of Malaria in a Stained Dehemoglobinised Thick-film Preparation. Ronald Ross.
33 *The Relationship of Kala-azar with Mediterranean Fever and Some Details of the Hematology of the Latter. P. W. Bassett-Smith.
34 Ethyl Chlorid as a Substitute for "Gas" in the Tropics. J. Preston Maxwell.
35 Malarial Fever in the Isthmus of Suez. J. E. Cresswell.
36 On Nagana and Other Trypanosomes. Dr. Schilling.

33. **Kala-Azar.**—Bassett-Smith points out the differences which exist between kala-azar and Malta fever, which have been considered by Bentley to be identical. He thinks the principal differences of kala-azar from Malta fever are in the greater degree of infectivity and more rapid diffusion, the high mortality, more constant hypertrophy of the liver and spleen and the greater degree of emaciation and pigmentation produced on the one hand and the absence of those neuralgias and peripheral neuritic symptoms of Malta fever on the other. The identity of the two diseases is not proven.

Bulletin de l'Academie de Medecine, Paris.

37 *Report of Committee on Liqueurs and Essences Used in Their Manufacture.
38 Note sur l'urgente nécessité d'appliquer la vaccine obligatoire à l' Indo-Chine française. Hervieux.

37. **Liqueurs and Essences.**—Laborde is chairman of a committee which comprises Brouardel, Lancereaux, Cornil, Magnan, Pouchet, Motet and Joffroy. Their report gives a list of the most dangerous essences used in the production of liqueurs, and urges their absolute prohibition or stringent measures for their control. The essence or volatile oil of absinthe is so dangerous that its sale should be absolutely prohibited, as also the oil of rue, of gaultheria, of hyssop, of illicium, of angustura, salicylic aldehyd and benzoic aldehyd or prussic acid. All these essences—the French use the term essence to express a volatile oil—are used in the manufacture of various liqueurs, and they should be unconditionally prohibited, on account of their peculiarly toxic character, or at least a prohibitory tax imposed. In a second list they include the essences, whose sale should be regulated, but need not be suppressed entirely. This includes the oil of peppermint, spirit of anise, oil of nutmeg, oil of cloves, oil of mace and sixteen others. The report concludes with a clinical portrayal of some of the effects of the habitual use of beverages concocted with these volatile oils, followed into succeeding generations, referring to Féré's research on the influence of alcohol and essences on the incubation of hen's eggs. The secret recipes for several liqueurs are given, showing the large proportion and the number of dangerous essences that enter into their composition.

Bulletins de la Societe Med. des Hop. de Paris.

39 (No. 27.) Les flux bilieux dans la cholémie familiale. A. Gilbert and P. Lereboullet.
40 Le pseudo-ulcère stomacal d'origine biliare. Ibid.
41 Le signe d' Argyll-Robertson et la lymphocytose du liquide céphalo-rachidien. Widal and Lemierre.
42 (No. 28.) Cas d'appendicite pneumococcique. Ferrier.
43 De la lymphadénie lymphatique aleucémique. E. Weil and A. Clerc.
44 (No. 30.) Tabes hérédo-syphilitique. (Tabes héréditaire). J. Babinski. Two cases.
45 (No. 32.) Lymphocythémies aleucémiques. Vaquez and Ribierre.
46 De l'influence favorable de la ponction lombaire sur le vertige Voltaique et sur certains troubles auriculaires. J. Babinski.
47 *Clinical Relations between the Mumps and Pneumococcus Infection. Simonin.—Pneumococcie et infection ourlienne.
48 (No. 33.) Vomissements (vomiting) acétoniques. L. Guinon.
49 Résultats négatifs du sérum proposé par le Dr. Leuriaux pour traiter la coqueluche (anti-whooping cough serum). G. Variot. Three cases.
50 Du traitement de l'hémoptysie par l'adrénaline. Souques and Morel.
51 (No. 34.) Ibid. L. Renon and Louste.
52 Nature, évolution et durée de la réaction méningée dans le zona. A. Chauffard and G. Froin.
53 Arthrites blenorrhagiques. H. Vaquez and C. Laubry. Two cases.
54 (No. 35.) *Recherches sur les éliminations urinaires et la physiologie pathologique des néphrites scléreuses chroniques. H. Claude and F. Burthe.
55 Rhino-pharyngite typhoidique à bacilles d'Eberth. P. Gallois and others.
56 (No. 36.) Cas de paralysie ascendante aigue; névrite radiculaire sans altération méningée; absence de lymphocytose dans le liquide céphalo-rachidien. F. Widal and L. Le Sourd.
57 La radiographie du crane (of skull) et le diagnostic de l'acromégalie. A. Béclère.
58 *The Typhoid Bacillus in the Blood. J. Courmont and C. Lesieur. Le bacille d'Eberth dans le sang des typhiques.
59 *Ibid. F. Widal.
60 (No. 37.) Le diagnostic radioscopique du diverticule de l'esophage. A. Béclère.
61 *Quelques résultats du traitement des névralgies par les injections sous-cutanées d'air atmosphérique. P. Marie and O. Crouzon.
62 *Efficacité de l'argent colloidal (collargol) dans le traitement des maladies infectieuses; multiplicité de ses indications. Netter.
63 (No. 38.) *Ibid. L. Renon.
64 *Fièvre typhoide traitée par le collargol. L. Renon and Louste.
65 A propos du collargol. Moutard-Martin.
66 Ulcères multiples du pylore et gastrosuccorrhée sans stase. M. Soupault. Two cases.
67 (No. 39.) *2 cas de pneumonie traités par le collargol. Moutard-Martin.
68 Les suites éloignés (remote consequences) de la méningite cérébro-spinale. Widal and Lemierre.
69 Néphrites chroniques bilaterales consecutives à des lésiones traumatiques d'un seul rein (of a single kidney). J. Castaigne and F. Rathery.
70 (XX, 1.) Note sur quelques particularités cliniques des paralysies diphthériques. C. Aubertin.
71 Nouvelle methode de recherche du bacille tuberculeux. A. Jousset.
72 (No. 2.) L'inoscopie appliquée au diagnostic des ascites tuberculeux. Béclère. See THE JOURNAL of Feb. 21, p. 547.
73 *Argent colloidal. Indications diverses. Mode d'emploi. Doses. Effets. Mécanisme de son action. Netter.
74 La duodénite ulcéreuse urémique. E. Barie and P. Delaunay.
75 Les lesions du système lymphatique postérieur de la moelle sont l'origine du processus anatomo-pathologique du tabes. P. Marie and G. Guillain.
76 (No. 3.) Ulcérations hémorrhagiques de la peau (skin) et des muqueuses (mucous membranes) dans l'urémie. P. Dalché and H. Claude.
77 L'adrénaline dans un cas d'hemorroides irréductibles avec menace d'étranglement. A. Mossé.
78 *Recovery in Case of Atrophic Cirrhosis of the Liver Treated "in extremis" with Liver. Galliard.—Guérison d'une cirrhose atrophique du foie soumise "in extremis" à l'opothérapie hépatique.
79 *Gumma hérédo-syphilitique guérie par les injections locales d'iodure de potassium. Labadie-Lagrave and M. Rollin.
80 Les angines banales chez les rougeoleux adultes (angina in measles in adults). Etude clinique et bactériologique. Simonin.
81 Une nouvelle observation de phlébite syphilitique secondaire. A. Renault and G. Roussy.

47. **Mumps and the Pneumococcus.**—Simonin describes 8 cases in which a pneumococcus infection coincided with or preceded the mumps. Laryngo-bronchitis has been frequently observed in the course of or consecutive to mumps, and his experience indicates that this disease induces a peculiar predisposition to pneumococcus infection, and also that the latter

germ acquires greater virulence in its symbiosis with the mumps germ. He therefore urges prophylactic measures to avoid the double infection.

54. **Elimination in Chronic Sclerous Nephritis.**—Claude and Burth made a most careful study of seven cases of this affection and tabulate the findings. They show that the elimination in the urine is profuse for a long time, thanks to a peculiar adaptation of the cardio-vascular system to the condition of the kidney. The glomerulo-tubular systems become hypertrophied and compensate the lesions of sclerosis until the heart becomes affected or some infection or intoxication causes inflammation in the globerulo-tubular systems, after which insufficiency of the kidney becomes manifest and more or less permanent.

58-59. **Typhoid Bacillus in the Blood.**—Courmont found the typhoid bacillus constantly in the blood in 37 typhoid patients, all adults, from the first days of the disease to the end of the third week. They inoculated 300 to 500 c.c. of bouillon with 2 to 4 c.c. of blood. In 6 cases the bacilli were found long before the agglutinating test was positive. Widal's experience has been that he could not cultivate the bacillus from the blood in 5 very mild cases of typhoid fever. It was found in 17 out of 20 moderate or severe cases, examined from the fifth to the fifteenth day. In 5 cases the staphylococcus was found with the typhoid bacillus, and in 2 of the negative cases it was found alone. In another negative case a streptococcus and a colon bacillus were found in the blood. He inoculates 400 c.c. of bouillon with 4 c.c. of blood. Agglutination was positive in all the cases.

61. **Injections of Air in Treatment of Neuralgias.**—Marie has been giving Cordier's method of treating neuralgia by injections of air a trial in his service. He reports that 2 out of 3 patients with sciatica were benefited after several repetitions of the injection. One of the patients was relieved at once and permanently. A third of a liter of air was injected at three different points. A patient with neuralgic zona was also relieved at once and likewise a tabetic. In lumbago the relief was merely transient.

62 *et seq.* **Colloid Silver in Infectious Diseases.**—Netter is professor agrégé and physician to the Trousseau Hospital, where he has been testing since November 15, Credé's colloid silver, better known as collargol. A child of 7 with acute pericarditis received an intravenous injection of 2 c.c. of a 1 per cent. solution, with three frictions of 2 gm. each of the collargol salve. The child's recovery was rapid, resembling in every respect the curves of pericarditis published by Wenckebach, showing the great benefits of collargol treatment. Other cases were pneumonia, meningitis and typhoid fever and the results were apparently good. Netter remarks that the favorable action of the collargol is first marked by the subsidence of the temperature, then by the general well-being, similar to the relief afforded by antidiphtheria serum. Renon states that Follet of Paris has been treating patients with various affections since 1898, with silver powder in suspension. He reports that a large number with acute or chronic tuberculosis have been treated with silver powder injected once or twice a week. He mixes about 1 gm. of the powder with 60 gm. of artificial serum and 10 gm. of oil of guaiacol and eucalyptol. The cough and expectoration have gradually disappeared and the majority now consider themselves cured. The injections are made in the buttocks and are not painful. Renon also calls attention to a patient with typhoid fever treated after the tenth day with collargol frictions, using 3 gm. at a time of the 15 per cent. salve. The temperature fell after the second rub and the disease was evidently aborted after the fourth. No other treatment was used and the depression and delirium of the onset indicated that the case promised to be severe. Martin found rapid improvement in 2 cases of pneumonia. Netter's experience now includes 9 cases of pneumonia, and the same of typhoid fever, 14 of bronchopneumonia, 4 of severe scarlet fever and 37 of diphtheria. He emphasizes especially the remarkable results attained with it in several cases of malignant diphtheria. The results have also been fine in a case of puerperal infection and in one of infectious endocarditis and of endocarditis in articular rheumatism. No benefit has been apparent to date in tubercular affections in his experience, nor in any cases of cerebrospinal meningitis, erysipelas, phlegmon of the breast or adenitis. He ascribes the efficacy of the colloid silver to its catalytic action rather than to its bactericidal power. Bredig has established that platinum, gold and silver in the colloid state behave like a true ferment, an inorganic ferment accelerating the chemical transformations by their presence in infinitesimal quantities the same as the figured and the organic ferments.

78. **Organ Treatment of Cirrhosis of Liver.**—A woman had been treated at intervals for nearly a year on account of advanced cirrhosis of the liver. She was much emaciated and scarcely urinated at all, while the ascites and edema were excessive and recurred after every puncture, notwithstanding a strict milk diet and diuretics. Pig's liver was then ordered for her and she took 150 gm. a day. In a few days the urine became clear and abundant. The edema and ascites subsided and the patient was able to get up in ten days. The improvement continued and in five months she was able to abandon the liver without recurrence of symptoms. About a year after the last symptoms had disappeared she returned to the hospital complaining of scanty urine (800 gm. a day). It contained urobilin. After resumption of the liver for a few days, the urine returned to normal and the patient's recovery has been undisturbed since, more than two years and a half since the liver treatment was first commenced. Galliard has treated a number of cases of cirrhosis in this way during the past few years, but none showed such surprising benefit as this one.

79. **Local Treatment of Gumma.**—The gumma developed on the leg at the same time as a keratitis was observed, both indications of hereditary syphilis, presenting no manifestations until the subject was 25. The gumma was as large as a hen's egg, and was treated with daily local injections of 2 c.c. of a 3 per cent. solution of potassium iodid at a little distance from the lesion. By the seventh day it had entirely disappeared.

Dermatologisches Centralblatt, Berlin.

82 (No. 11.) Ein statistischer Beitrag zur Prophylaxe der geschlechtlichen Krankheiten (venereal diseases). R. Loeb.
83 (No. 12.) Noch ein Fall von extragenitaler Syphilis. J. S. Gouladze.
84 (VI, No. 1.) Ueber Urethritis petrificans und Steine der Harnröhre (stones in urethra). J. J. Karvonen. One case of each.
85 *Zu einer Prophylaxe der Tabes und Paralyse und vielleicht syphilitischer Nachkrankheiten überhaupt (and possibly of all syphilitic after-affections). P. Cohn.
86 (No. 2.) Die Circumcision in der Prophylaxe der Syphilis. H. Breitenstein.
87 Beitrag zur Frage der individuellen Prophylaxe der venerischen Krankenheiten. Neuberger.

85. **Venesection Prophylaxis of Syphilitic After-Affections.**—Cohn recommends venesection periodically to remove toxins in the blood. He says the new formed blood to replace that lost will bring renewed energy to the combat with the disease.

Deutsche Med. Wochenschrift, Berlin and Leipsic.

88 (No. 4.) Ueber freie Receptoren von Typhus- und Dysenterie-Bazillen und über das Dysenterie-Toxin. M. Neisser and K. Shiga.
89 *Ueber die Untersuchung von Menschen- und Thierknochen (differentiation of bones) mittels der Wassermann'schen Differenzirungs-Methode. A. Schütze.
90 *The So-called Physiologic Salt Solution. F. Engelmann.—Einiges über die so-gen. physiol. Kochsalzlösung.
91 *Cancer Tissue and Etiology. L. Feinberg.—Ueber das Gewebe und die Ursache der Krebsgeschwülste.
92 *Verband (bandage) der dislozirten Phalangeal-Fractur. Clamann.
93 Malaria-Immunitat und Kindersterblichkeit (child mortality) bei den Eingeborenen (natives) in Deutsch-Ost-Afrika.
94 Eeine neue wirksame (effective) Lampe für licht-therapeutische Zwecke (for phototherapy). H. Strebel (Munich).

89. **Differentiation of Human and Animal Bones by the Biologic Test.**—Schütze has found it possible to differentiate scraps of bone in forensic cases by the biologic test when all other measures had failed. It is indispensable, however, that enough albuminoid substance should still cling to the bone to induce the specific cloudiness. It is very seldom that a scrap of bone sent for examination is entirely free from some albuminoid matter.

90. **The Physiologic Salt Solution.**—Engelmann insists that the term physiologic salt solution should be exclusively reserved for the true isotonic solution, which is 9 per cent. Otherwise the term should be dropped, or used merely in a relative sense, always adding the percentage of concentration.

91. **Structure and Etiology of Cancer.**—Feinberg has been applying the methylene-blue-eosin stain to the study of the cells found in cancer, and states that it reveals a number of cells in which the nucleus is of the peculiar and exclusive type of independent unicellular living beings. It differs from the nucleus of all other cells in that it never contains nucleoles or anything suggesting a framework for the nucleus. The chromatin substance, which in other cells forms the framework, in these cells is collected in a single compact body, which he calls the "nucleus point" (Kernpunkt). This "nucleus point" is always to be found when the cell is at rest. The constant discovery in cancer tissue of numbers of these cells with the structure of independent unicellular organisms is, he thinks, an important factor in the etiology of malignant neoplasms. Of all the writers who have published communications in regard to the discovery of assumed parasites, he remarks that those of Soudakewicz, Foa, Plimmer and Sawtschenko are the only ones based on the technic of an expert. Closer study will probably show that the same object was seen by each of these observers, and that it is identical with the unicellular living animal or vegetable organism he describes.

92. **Bandage for Fractured Phalanx.**—Clamann bends the finger over a covered spool or roll of linen, and fastens it firmly in this position by a long strip of adhesive plaster passing from the back of the hand the whole length of the finger and then brought up on the back of the hand again. In order to make the plaster fit better, the ends are slit at the nail and also on the back of the hand, and slits are cut at the points of the knuckles.

Muenchener Med. Wochenschrift, Munich.

95 (No. 4.) *The Kidney in Scarlet Fever and Diphtheria. O. Heubner.—Bemerkungen zur Scharlach- und Diphtheriniere.
96 *Serum Treatment of Exophthalmic Goiter. O. Lanz.—Weitere Mittellung über serotherapeutische Behandlung des Morbus Basedowii.
97 *Ueber das Antithyreoidin. P. J. Möbius.
98 Atypische Myom-Operationen. H. W. Freund.
99 *Ueber Ionen-Wirkungen (action of ions) und ihre therapeutische Verwendung. W. Pauli.
100 Die Syphilitische fibröse Darm- und Magen- (intestine and stomach) Striktur. H. Gross.
101 Beiträge zur Sondierung der Speiseröhre (sound for esophagus). H. Starck.
102 Fall von urämischer Amaurose. W. Hauenschild.
103 Kasuistische Beiträge zur Lehre von den Missbildungen (deformities). K. Kompe.
104 Fall von Gravidität-Hemoglobinurie. Meinhold.
105 (No. 5.) Ueber die Begutachtung der Unterleibsbrüche (medical testimony in regard to abdominal hernias). G. Sultan.
106 *Operative Behandlung gewisser Lungenerkrankungen (of certain lung affections). G. Treupel.
107 Ueber akute cerebrale Ataxie. A. Bickel. One case.
108 *New Facts and New Prospects in the Domain of Nutrition. M. Ascoli.—Neue Tatsachen und neue Ausblicke in der Lehre der Ernährung.
109 2 seltene Masernfälle (unusual cases of measles). J. A. Grober.
110 *Fall von Thrombophlebitis. J. Cnopf.
111 Fall von Pharyngitis gangränosa, kombiniert mit Appendicitis gangränosa. W. Mayer.
112 Ueber die Auscultation der Mundhöhle (of the mouth). U. Baccarani.
113 Ueber plastische Hilfsmittel (aids) für den geburtshilf-gynakologischc (obstetric-gyn.) Unterricht (instruction). E. Winternitz.
114 *Screw Gag. E. Braatz.—Schrauben-Mundsperrer.
115 Ueber die Immunisierung des Typhus-Bacillus gegen spezifische Agglutinine. P. T. Müller.

95. **The Kidney in Scarlet Fever and Diphtheria.**—Huebner describes his examination of the kidney in two pure cases of each disease. He found that the organ was the seat of a pronounced hemorrhagic affection in scarlet fever. The glomeruli were principally involved and the epithelium secondarily. The vascular portion of the kidney was thus predominantly and primarily affected. The aspect was different in diphtheria; here there was little if any hemorrhagic tendency. The degeneration of the epithelium was primary. It occurred only in parts.

96. **Serum Treatment of Exophthalmic Goiter.**—Lanz commenced in 1894 to apply the milk of goats, after ablation of the thyroid gland, to the treatment of Basedow's disease. He has now an experience of 6 cases, in which the patients were supplied with a thyroidectomized goat, and of 3 other cases in which the symptoms were less pronounced or other remedies were used as adjuvants. He describes the particulars of the series of 6 cases and the results attained will evidently attract attention. His Case 3 was a woman of 38, apparently in the last stage of Basedow's disease. She had to be carried into the train, was confused, stuttered, wept and sobbed instead of replying to questions, with extreme tremor of the four extremities, emaciated, skin moist over entire body, tachycardia of 140 to 160, edema of legs, extreme exophthalmus, struma very large, neck 39 cm. in circumference, apex beat abnormally strong, long suppression of menses and the typical heart symptoms of the disease. She was put on the milk of a goat thyroidectomized for the purpose and improved rapidly. In five or six weeks the heart symptoms began to subside; the menses returned later, and by the end of the year she announced herself as completely restored. A letter from her attending physician is quoted at length. He states that the tremor, excitability and other nervous symptoms have entirely subsided. The pulse has fallen from 120 or 140 to 80. The excessive thirst has disappeared and the weight has increased from 98 to 126 pounds. There is no longer any insomnia; the eyeballs have retrogressed, and the patient feels perfectly well. The struma has not diminished in size and the circumference of the neck is about the same as before. The symptoms did not recur after suspension of the milk at the end of the year. The goat which supplied the patient in Case 4 gave about one liter of milk. After five months the supply of milk failed, but the improvement obtained during the milk treatment did not subside on suspension. Her attending physician writes that the patient's weight has increased from 78 to 110 pounds, with pulse 80 when quiet. The prominence of the eyeballs is no longer noticeable. All previous treatment had been ineffectual. Case 7 was a man of 25, with a negative family history. Six weeks after he had been supplied with a thyroidectomized goat his physician writes that the improvement gained has been permanent. Lanz calls attention to the fact that it is easy to mistake the salivary glands for the thyroid in the goat, and also to overlook the isthmus glandulæ thyreoidæ. Other attempts at serum treatment of Basedow's disease have been made with thyroidectomized dogs. Schultes has recently reported great benefit derived from the serum of thyroidectomized sheep, Möbius' "Antithyreoidin." The patient's mind was affected and, consequently, the benefits derived could not be attributed to suggestion. His case is also interesting from the fact that the symptoms recurred on suspension of the treatment and promptly subsided again on its resumption.

97. **Antithyreoidin.**—This is the name applied to the serum of thyroidectomized sheep. Möbius has been using it in doses of 5 gm. every second day and the results have established its harmlessness and the unmistakable benefit derived. His patients had all suffered for years from benign Basedow's disease, and all were unmistakably improved. The only objection to the remedy is the high price. He longs for some millionaire patients who could afford to try a course of the serum in much larger doses, as he anticipates better results from more vigorous treatment.

99. **Therapeutic Application of the Action of Ions.**—Pauli believes that he has succeeded in establishing several laws in regard to the manifold analogies between the alterations in the condition of colloid substances with the processes that occur in living matter. He gives his reasons for assuming that the precipitating action of a salt on the albuminoid bodies is principally the result of the algebraic sum of the actions of the single ions. Also that the anions and the cations have an antagonistic action, the latter causing precipitation and the former inhibiting it. The salts can thus be grouped by their precipitating power, as he shows in a table the fluorids of magnesium, potassium, sodium and lithium being the strongest precipitators and the bromids, iodids and rhodanids the weakest. The precipitating power increases with the

cations from magnesium to lithium, and decreases with the anions from the fluorids to the rhodanids. The fact that the rhodanids are the last link in this regular chain suggests that they may likewise possess therapeutic value like the iodids just above them. Pauli has been testing them in this respect on 35 patients with various affections, administering 1 gm. of sodium rhodanid as the maximum dose. In 10 cases of neuroses or organic nervous affections the symptoms rapidly subsided, and recurred on suspension of the drug, while they disappeared again on its resumption. The only exception was a case with pains in the epigastrium, the pathogeny of which is still obscure. In 11 cases of arteriosclerosis, the pains and oppression subsided, the exacerbations became less and less intense and the vertigo and sounds in the head completely vanished. In every case the blood pressure sank from 10 to 25 per cent. On suspension of the drug, the blood pressure rose again in three or four days to its original figure, and some of the symptoms recurred, but subsided again on its resumption. The efficacy of the rhodan compounds in such small doses is explained by their low molecular value; 1 gm. of sodium rhodanid is equivalent to 2.15 gm. of the bromid and 2.82 of the iodid. Besides the sedative and blood pressure reducing action of the rhodanid there is probably another factor in its therapeutic effect, its power to induce the formation of easily soluble combinations of protein which favor the elimination of the heavy metals to an extreme degree and is particularly useful in case of chronic lead or other poisoning. It also has a marked effect in favoring the elimination of calcium, as he shows by research on the calcium ions. In 4 cases of kidney disease the sacral pains, neuralgias and insomnia vanished as the patients took the sulfocyanid in connection with a strict milk diet, showing that, to say the least, chronic albuminuria is no contraindication to it. The effect was strikingly beneficial also in 4 cases of syphilitic headache. As a further evidence of the close analogy between the rhodanids and the iodids is the fact that the former are liable also to induce acne and coryza, as occurred, to a slight extent, in a very few instances, but subsided on suspension of the drug. The rhodanid (sulfocyanid) has no apparent influence on the thyroid gland, even after months of use. It did not cause the slightest gastric disturbances in any case. The researches of Meyers and Overtons have established the relations between the "lipoid" elements of the cell and the non-ionized narcotics, and it is probable that the ionized combinations assail the albuminoid complexes of the protoplasm. As the normal cell ions are affected or displaced, the colloid conditions become altered and with them the functional activity.

106. **Operative Treatment of Lung.**—Treupel describes another case in which notable benefit was derived from an operation in a case of gangrenous abscess of the lung in a boy of 4. An exploratory puncture revealed only a serous, sterile fluid at first, although all signs pointed to an abscess, but ten days later the symptoms indicated a pyopneumothorax and puncture this time disclosed a fetid, gaseous, purulent exudate. The abscess had evidently perforated into the pleura, and he regrets that he had not operated earlier, before this perforation occurred. The serous effusion first found was undoubtedly the reaction of the pleura to the abscess in the vicinity, and should have been the signal for intervention, even if the lesion were known to be of tubercular origin, which was not established in this case.

108. **New Outlook in the Domain of Nutrition.**—Ascoli states that it is possible to detect particles of the food in the lymph by the biologic test after feeding dogs with raw eggs or roast fowl. The entrance of these precipitable particles into the circulation induces variations in the precipitins contained in the blood, and alters the balance of the pre-existing side-chain complexes. He found the same phenomenon in man after ingestion of roast beef, and thinks that it is the key to the pathogenesis of the so-called nutritional diatheses or affections.

110. **Thrombophlebitis in Measles.**—A healthy child, about the seventh day of the exanthem of measles, developed cerebral symptoms, with death four days later. The sinus longitudinalis was the seat of a necrotic thrombophlebitis, with extensive destruction of the surrounding parts. The kidney was also disseminated with infarcts. The case suggests that the measles process alone, without outside aid, affords a favorable soil for necrobiosis. Cnopf reviews a number of cases in the literature, in which a septic process coincided with measles, to sustain this view.

114. **Screw Gag.**—The two flat plates that form the gag are parallel and are introduced between the teeth close together. They are then separated by a screw in the handle, on the principle of a monkey wrench.

Therapie der Gegenwart, Berlin.

116 (January.) *Oxygen in Therapeutics. F. Kraus.—Zur Sauerstofftherapie.
117 *Ueber Infusions-Behandlung. W. Ercklentz.
118 *Ueber Chinaphenin. C. v. Noorden.
119 *Local Treatment of Surgically Important Infections. E. Lexer.—Ueber die örtliche Behandlung der chirurgisch wichtigen Inf.
120 Zur Pathologie und Therapie einiger Kniegelenkskrankheiten (knee affections). A. Hoffa.
121 Die Complication von Schwangerschaft (pregnancy) mit Herzfehler (cardiac defect). J. Veit.
122 *Die Behandlung der Syphilis mit Calomel-Injectionen. E. Lesser.
123 Zur Tuberkulose-Frage (question). F. Klemperer. Collective Review.
124 Fieber und Schüttelfröste (chills and fever) mit Leberschwellung (with enlargement of liver) geheilt durch Quecksilber (cured with mercury). G. Klemperer.
125 *Die Anesthesin-Behandlung des Erysipels. Henius.
126 Ueber Bromipin-Klystiere (enemata) besonders in der Kinderpraxis (in pediatrics). A. Rahn.
127 *Radiography without Plates. F. Kronecker.—Eine Methode zur wesentlichen Vereinfachung und Verbilligung des Roentgen-Verfahrens.
128 Treatment of Consumption 133 Years Ago. S. Kaminer.—Schwindsuchts-taerapie vor 133 Jahren.
129 (February.) Reduction of Obesity. E. H. Kisch.—Ueber den Gang der Fettabnahme bei Entfettungskuren.
130 Ueber die Wirkungen zweier neuen Verbindungen des Arsens und Phosphors (action of two new combinations of arsenic and phosphorus). R. Kobert.
131 Klinische Beobachtungen über Agurin. F. Montag.
132 Die Rahmgemenge und ihre neuere Ergänzung (mixtures of cream and their latest completion). Biedert and Gernsheim.
133 Ueber die obere Altersgrenze (highest age limit) für die Behandlung der congenitalen Hüftverrenkung (hip dislocation). G. Müller.
134 Zur Therapie der Gonorrhoe. W. Pick.—Die combinirte Chrom-Säure-Argentum-Therapie.
135 Ueber die Bekämpfung des Typhus nach R. Koch. F. Klemperer. Review.
136 Ueber die Schädlichkeit (injuriousness) der Bor-Säure (boric acid). C. v. Noorden.
137 Zur Verwendung des Wasserstoffsuperoxides (hydrogen dioxid) als Verbandmittel (for dressings). E. Unger.
138 Kreosotal gegen Pneumonie. B. Friedemann.

116. **Oxygen in Therapeutics.**—Kraus remarks that he has experimented on himself with inhalation of oxygen, and never noticed any special subjective or objective phenomena after inhaling it for more than an hour at a time. The pulse was unaffected, but the respiration was a little deeper. He experimented with it both at rest and during physical exercise, but could not detect any variance from ordinary conditions either in himself or in a number of anemic and diabetic subjects. On account of the negative results, he has never published an account of these quite extensive researches. The freezing-point of the blood was not altered in healthy persons, even after prolonged inhalation of oxygen. The proportion of chlorin remained approximately the same. In one patient with croupous pneumonia and extreme cyanosis, the chlorin was in the proportion of .635 per cent. before and .63 per cent. after prolonged inhalation of oxygen. The pulse and diuresis were not affected, but the patient stated that she felt "relieved." The process of oxidation in the organism is probably complex and requires oxidases as well as the oxygen itself. Inhalation of it does not relieve the death agony. Kraus has seen scarcely any but bad results follow its use in pneumonia, and it is generally useless in tuberculosis. In cardiac insufficiency and dilatation, it usually affords subjective relief, but the cyanosis never actually vanished in his experience. In the coma of morphin intoxication much better results were obtained from tracheotomy and artificial respiration for twenty to thirty-six hours. Oxygen never induced the slightest appreciable benefit in anemia nor in leukemia, diabetes and other constitutional diseases. The principal indication for its use is stenosis of the air passages. When only

a small quantity of air can reach the alveoles, it is rational to supply the air in as concentrated a form as possible. Oxygen is also useful in carbon oxid intoxication. In urgent cases intravenous injection may be preferable to inhalation.

117. **Infusion in Therapeutics.**—Ercklentz found that animals treated by infusion after otherwise fatal intoxication survived, and their organs showed little trace of the intoxication to which the control animals all succumbed with severe alterations in their organs. The best results, strange to say, were obtained, not from the true isotonic 9 per cent. salt solution, but with the 6 per cent. The benefit was most apparent the nearer the infusion approached to being continuous. In some of the tests the poison used entered so rapidly and firmly into combination with the nerve cells that the infusion was too late to affect it. The diuresis invariably induced did not eliminate any of the poison in these cases. The results of infusion after experimental injections of anilines and potassium chlorate harmonize with what is observed in the clinic, especially in respect to severe anemia, which is now regarded as a toxic affection, in septic affections and in uremia. Septic conditions are benefited to a remarkable extent by infusion. In a case of malignant endocarditis, for example, with extremely painful joint metastases, the swelling and pains in the joints vanished as if by magic after the infusion. A patient with puerperal sepsis was roused from her stupor, and another was undoubtedly saved by the systematic continuous use of infusion. Its efficacy in uremia is well known. Improvement and sometimes recovery followed the copious diuresis induced, but the specific gravity of the urine frequently remained high, and even rose higher with the increasing amount of urine. The results were always highly satisfactory in severe anemia. In one case the hemoglobin rose from 20 to 85 per cent. and the reds from 368,000 to 4,800,000. The morphologic alterations in the blood retrogressed, and the slight temperature subsided. So long as severe symptoms persist, one or two liters should be injected subcutaneously once to several times a day. When exceptionally prompt action is desired the intravenous route may be preferable, preceded, perhaps, by venesection. He concludes by advising the use exclusively of the .9 or .92 per cent. solution as the only isotonic one.

118. **Chinaphenin.**—This combination of quinin and phenacetin has been tried by Von Noorden during the last two years in a number of affections, including whooping cough, typhoid fever, pneumonia, neuralgias, etc. It apparently possesses the virtues of each of its ingredients, while their drawbacks are neutralized. It was always well tolerated.

119. **Surgical Infections.**—Lexer reviews his experience at Von Bergmann's clinic, and separates the lesions in question into three groups. The first includes snake bites, etc. Absorption of the poison is best averted by constriction above on the limb and excising the wounded part, always using the knife, never the thermocautery. The second group includes anthrax and similar septic processes. Incisions, application of disinfectants and even movements of the muscles of the part may irritate the inflamed tissues and lead to absorption of the germs which otherwise may remain localized. It is sufficient to cover the lesion with a thick layer of salve on a rag and immobilize the part, in a sling, for instance, if the arm be involved. Any one who has seen a facial thrombophlebitis and fatal meningitis develop from a furuncle on the lip which had been pricked and squeezed and otherwise maltreated, will appreciate the benefits of cautious, conservative treatment. The smallest boil may be the source of the severest suppurative osteomyelitis. After opening such a lesion the cavity should be drained and a dry tampon loosely applied. The dry tampon sucks up the secretions and prevents their reabsorption from the wound. The cautery scab has the opposite effect and should be strictly avoided. In incising a large plegmon narcosis is necessary and a constricting bandage around the part. In case of inflammation of a finger, the constriction should be applied at the root and cocain injected into sound tissue, which should always be the rule, never into already inflamed tissue. Small abscesses, etc., are best incised under ethyl chlorid anesthesia. Moist dressings should be rejected except, possibly, for the very mildest affections. Suppuration is more liable and more rapid with than without them, and once established they promote its continuance. Panaritium in the bone is frequently induced by them and poultices are liable to entail extensive necrosis. Suppuration is injurious, as it destroys the tissues. In his third group, the surgeon has long abandoned the hope of destroying the germs in a tetanus wound, bite of a mad dog, or in glanders, by disinfectants. Foreign bodies should be removed from the wound which should be incised freely and kept open under aseptic treatment. This will remove a certain portion of the germs. Excision is better than cauterization for small wounds, but in case of extensive lesions, much soiled, the only treatment is immediate amputation if symptoms of tetanus develop during the first week and they prove violent, even when serum treatment has been promptly applied. In case of a mad dog bite, excision into sound tissue is considered sufficient. In both cases the excision must be smooth and kept open. The conditions are the least promising in acute glanders. Amputation, to be successful, must be done before the lymphatics are involved, and this can occur only in exceptional cases. The abscesses must be incised and every mechanical irritation scrupulously avoided. Curetting the focus has transformed many a mild chronic case into an acute and fatal one.

122. **Calomel Injections in Syphilis.**—Lesser has observed a number of cases and remarks that injections of calomel are liable to cause symptoms of severe intoxication and disagreeable by-effects. They should be reserved for exceptional cases, but are very useful when absolutely indicated.

125. **Anesthesin in Erysipelas.**—Henius states that 25 cases of erysipelas have been treated at Von Noorden's clinic with a 10 per cent. lanolin-vaselin salve of anesthesin, with the result of complete abolition of all pain. No intolerance or by-effects were observed in any case. He adds that he used the anesthesin in two cases of gastric crises in tabes, by intradural injection of a 3 per cent. oil solution, as in spinal cocainization. There was not the slightest anesthesia from it, which confirms Von Noorden's assertion that anesthesin acts only on the nerve terminals and does not affect the nerve trunks.

127. **Radiography Without Plates.**—Kronecker gives some fine radiographs, which were obtained by the use of sensitized silver bromid paper in place of plates. The exposure has to be three or four times as long as when a plate is used, and the exposed parts of the paper must become a shiny black before the picture is complete. But, once taken, the advantages of having the paper instead of a plate are obvious. The radiogram can be taken and completely finished in an hour or so. Another advantage of the paper is that as large an area can be photographed as desired. By combining two of the large sheets it might be possible to take the entire skeleton of an adult at once.

Hospitalstidende, Copenhagen.

139 (Nos. 49-50.) *Tapeworm in Children. N. Schiödte.—Baendelorm i Barnealderen.
140 Medical Practice in Greenland. A. Bertelsen.—Bidrag til Belysning af Laegevaesenets Ordning i Groenland.
141 (No. 51.) *Three Gastric Affections Treated Operatively. F. Guldberg.—Tre Ventrikellidelser, behandlede operativt.
142 Polyneuritis alcoholica. K. Faber. One case.
143 (Nos. 52-53.) Blood-Vessel Endothelioma in Uterus. P. N. Hansen.—Blodkarendotheliom i Uterus.
144 *2 Tilfaelde af puerperal Sepsis, behandlede efter Fochier. L. M. Hoff.
145 Bemaerkninger om Opforelse af Sanatoriebygninger for Tuberculose. N. Flindt.
146 (XLVI, 1.) Om Behandlung af Lungen-Tuberkulose paa Provins-Sygehuse. C. A. Larsen.
147 (Nos. 2-3.) *Transfusion ved Betaendelser i Peritoneum (In peritonitis). L. Kraft.

139. **Tapeworm in Children.**—Among the 9,000 children admitted to the Luise Hospital at Copenhagen during the last twenty-four years, 43 had tapeworm. The Tenia mediocanellata was found in 37, the solium in 2, and the cucumerina, flavupunctata and the bothriocephalus latus once each. In the above cases 11 were recurrences. Schiödte also adds another series from another hospital, which brings the number to 65 cases, all the patients under 14. The particulars are given

in tabulated form. The exact age was mentioned in 48 cases: It was less than 1 year in 1; between 2 and 3 in 3; between 3 and 4 in 5; between 4 and 5 in 7. The sexes were nearly equally represented. The treatment was not invariably successful. Out of 40 with T. m., only 26 were completely cured. The best results were obtained with rhizoma filicis. One child required five courses before the complete expulsion of the parasite, another four courses, and three, two. Several had had treatment before; the total number of courses was eight in one instance. In one of the unsuccessful cases the child returned for treatment eight years later, proving that the parasite had continued to live for this length of time. The longest tapeworm was expelled from a boy of 13; it measured 14 yards. Another, in a child of 15 months, measured 8 yards. In one case 6 yards were expelled, and two months later 10 yards with the scolex. From this and other cases, he computes the growth of the worm as 10 cm. a day. The appetite in the children was ravenous or defective, or alternating periodically. The general health suffered much from the presence of the parasite and also from the courses of treatment. Some children were much emaciated, and others showed a deficient growth for their age. Nearly all the little patients exhibited pallor of skin and mucosæ, with slight anemia, possibly due to the toxins secreted by the parasite. He mentions that if the after-purge is given too soon, the children are liable to vomit it. He thinks that two or three hours should elapse. His monograph is a very complete study of the subject from all points of view.

141. **Three Gastric Affections.**—One of Guldberg's cases was an hour-glass stomach and gastroptosis, treated by a plastic operation and gastropexy. The second was similar, and was treated in the same way, but required later a gastro-enterostomy with Murphy button and subsequent enteroanastomosis. The button did not pass away, and required removal by a laparotomy thirteen months later. The third patient was treated by gastroenterostomy on account of an ulcer. All the patients were completely cured of their troubles.

144. **Treatment of Puerperal Fever with Artificial Abscesses.**—In the 2 severe cases of septic puerperal fever described, the patients rapidly recovered after the application of turpentine abscesses made according to Fochier's directions.

147. **Transfusion in Peritonitis.**—Kraft has been making an extensive experimental study of the effect of transfusion, that is, intravenous injection of normal saline solution, in artificially induced inflammation of the peritoneum and in health. He describes typical examples out of his experience with about a hundred rabbits. No effect from the transfusion was observed in regard to the absorption or transudation of the peritoneum in health, but it induced transudation whenever the heart or kidneys were insufficient. In case of incipient peritoneal septicemia, absorption by the peritoneum was promoted by the transfusion. It also increased the exudation in case of peritonitis with effusion from any cause. Transfusion is, therefore, indicated in cases of diffuse peritonitis with exudation, as a preliminary to operation, as the exudation is increased and absorption diminished. On the other hand, it is contraindicated in case of circumscribed or migrating peritonitis, as the increased exudation may loosen or detach the adhesions, and thus transform a circumscribed into a diffuse affection. But after an operation, in these cases, when ample outlet has been provided for the secretions and the still sound portion of the peritoneum is protected, transfusion may be useful. It must be cautiously applied, however, as the system would suffer if the resulting exudation were to entail too severe a loss of serum and albumin.

Hygiea, Stockholm.

148 (No. 11.) *Impressions in Regard to Treatment of Scoliosis. P. Haglund.—Om skoliosbehandlung.
149 *Insanity Among Women Teachers in Sweden. H. Lundborg.—Om sinnessjuka läkarinnor jämte en kort öfverblick öfver småskolelärarinnornas ställing i Sverige.
150 Fall af spontan intrakapsulär resorption af alderstarr (senile cataract). C. Lindahl.
151 Om katatoni. F. Svenson.
152 (No. 12.) Ruhemann's Test for Uric Acid. A. Blomquist.—En ny metod för kvantitativ bestämning af urinsyra.
153 Cesarean Section Under Compression of the Aorta. K. Dahlgren.—Kejsarsnitt under aortakompression.

148. **Treatment of Scoliosis.**—Haglund has been traveling in Europe and studying methods of treating scoliosis. The results of the best are far from satisfactory, he thinks, and do not repay the time and efforts. He urges that more attention should be devoted to prevention.

149. **Insanity Among Teachers.**—Lundborg found that 17, or 8 per cent., of the 216 unmarried female insane inmates of the Upsala asylum had been teachers in small schools or private families. He proposes various reforms in the management of the school system to counteract this tendency.

Gazzetta degli Ospedali, Milan.

154 (No. 147.) Alterazioni della sensibilita tattile, termica e dolorifica in seguito (consecutive to) lesione del nervo ulnare. A. Veneziani.
155 Bactericidal Action of X-Rays. Cippolina and V. Maragliano. Sull azione batt. dei raggi X.
156 Two Cases of Pulmonary Tuberculosis Recovered Under Serum Treatment. C. Romeo.—Tub. della pleura e del polmone, etc.
157 (No. 150.) La modificazioni istologiche degli organi nel corso del immunita sperimentale. G. Guerrini.
158 Contributo all'eziologia delle peritoniti iperacute. W. Zannini.
159 Contributo all'epidemiologia della malaria. G. Perrod.
160 Delle temperatura rettale nel tetano sperimentale. A. Kleefeld and J. Pinchart.
161 Contributo allo studio dell' incompatibilita terapeutica del miscuglio calomelano-antipirina in confronto col calomelano-piramidonis. F. Ubertis.
162 (XXIV, 2.) Contenuto in Azote delle principale derrati alimentari degli Ospedali Civili di Genova (nitrogenous elements in hospital rations). G. Zanoni.
163 Su di una epidemia familiare da diplococco di Fraenkel. C. Baduel and C. Gargano.
164 Sul tratamento chirurgico delle affezioni non-cancerose dello stomaco. G. Maresco. One case.
165 L'atropina nell oculistica occlusione intestinale. U. Fabris. One successful case.
166 Emorragia capsulare destra. E. De Renzi. One case. Cured by electricity.
167 (No. 5.) *Sul riflesso polmonare. A. Plessi.
168 Sulla pneumonite lobare acuta nei bambini (in children), a dolore ectopico appendicolare. O. Cozzolino.
169 Le aniline nella chimica clinica. C. Bernabei.
170 2 suture del ventricolo sinistro per ferite da punta e taglio (sutured stab wounds of left ventricle). Two cases; one recovery. E. Giordani.
171 Valore dell'esame chimico dell succo gastrico (chemical tests of gastric juice) nella diagnose delle dispepsie. G. Campanella.
172 Ancora dell' euchinino nell' infezione palustre. M. Capurbano.
173 La faradizzazione nell' occlusione intestinale. G. Fratti. One successful case.
174 Caso di ossurasi cutanea. P. Barbagallo.
175 *Caso di avvelenamento da sublimato corrosiva. A. Bormans.

167. **Lung Reflex.**—Plessi examined eight patients in regard to the lung reflex described by Adams, after spraying the skin over the lung with ether. He did not find the change in the outline of the lung so marked as Adams claimed. It was never more than 1 or 2 cm., and it is due, he believes, to the contraction of the diaphragm and muscles of the thorax under the influence of the spray.

175. **Recovery from Severe Sublimate Poisoning.**—A girl of 20 took three sublimate tablets of a gram each with suicidal intent. Her friends gave her hot drinks, which helped to dissolve the sublimate, but she vomited one tablet almost entire. None of the drug was found in the stomach when the physician washed it out. He administered white of egg. There was absolute anuria for five days and acute anemia from the severe losses of blood from the necrotic stomatitis, but recovery was rapid and complete.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY FOR 1903. A Yearly Digest of Scientific Progress and Authoritative Opinions in all branches of Medicine and Surgery, Drawn from Journals, Monographs, and Text-Books of the Leading American and Foreign Authors and Investigators. Arranged, with Critical Editorial Comments, by Eminent American Specialists. Under the Editorial Charge of George M. Gould, A.M., M.D. Volume II, General Surgery. Cloth. Price, $3.00 net. Pp. 670. Fully Illustrated. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

CLINICAL TREATISES ON THE PATHOLOGY AND THERAPY OF DISORDERS OF METABOLISM AND NUTRITION. By Prof. Dr. Carl von Noor-

den, Physician-in-Chief to the City Hospital, Frankfort a. M. Authorized American Edition, Translated Under the Direction of Boardman Reed, M.D., Professor of Diseases of the Gastrointestinal Tract, Hygiene and Climatology, Department of Medicine, Temple College, Philadelphia. Part I. Obesity. The Indications for Reduction Cures. Cloth. Pp. 59. Price, $0.50. Part II. Nephritis. Price, $1.00. New York: E. B. Treat & Co. 1903.

A MANUAL OF TOXICOLOGY. A Concise Presentation of the Principal Facts Relating to Poisons, with Detailed Directions for the Treatment of Poisoning; Also a Table of Doses of the Principal and Many New Remedies. By Albert H. Brundage, A.M., M.D., Phar. D., Professor of Toxicology, Physiology and Hygiene in the Brooklyn College of Pharmacy. Second Edition, Revised and Enlarged. Cloth. Pp. 374. Price, $2.00 net. New York: The Henry Harrison Co. London: Bailliere, Tindall and Cox. 1902.

THE PRACTICAL TREATMENT OF STAMMERING AND STUTTERING, with Suggestions for Practice and Helpful Exercises. By George A. Lewis, Originator of the Lewis Phonometric Method. And a Treatise on the Cultivation of the Voice, with a Discussion of Principles and Suggestions for Practice. By George B. Hynson, M.A., Late Principal of the National School of Elocution and Oratory. Illustrated. Cloth. Pp. 415. Price, $3.50. Detroit: George Andrew Lewis. 1902.

PROCEEDINGS OF THE SEVENTEENTH ANNUAL MEETING OF THE CONFERENCE OF STATE AND PROVINCIAL BOARDS OF HEALTH OF NORTH AMERICA. New Haven, October 28 and 29, 1902. Paper. Pp. 192. Providence: Snow and Farnham. 1902.

TWENTY-SEVENTH ANNUAL REPORT OF THE MANAGERS AND OFFICERS OF THE NEW JERSEY STATE HOSPITAL at Morris Plains, for the Year Ending October 31, 1902. Paper. Pp. 116. Trenton, N. J.: John L. Murphy Publishing Co. 1902.

PHYSIOLOGY AT HARVARD. By William Townsend Porter, M.D., Associate Professor of Physiology in the Harvard Medical School. Second Edition. Paper. Pp. 101. Cambridge, Mass.: The University Press. 1903.

A MANUAL OF DENTAL METALLURGY. By Ernest A. Smith, Associate of the Royal School of Mines, London. Second Edition. Cloth. Pp. 294. Price, $2.00 net. Philadelphia: P. Blakiston's Son & Co. 1903.

THIRTEENTH ANNUAL REPORT OF THE ST. MARY'S HOSPITAL, Rochester, Minn., for the Year 1902, Conducted by Sisters of St. Francis. Paper. Pp. 32. Rochester, Minn.: Daily Bulletin Print. 1903.

TWENTY-NINTH ANNUAL REPORT OF THE SUPERINTENDENT OF THE CINCINNATI SANITARIUM for the Year Ending Nov. 30, 1902. Paper. Pp. 17. Cincinnati: The Robert Clarke Co.

REPORT OF THE BOARD OF MANAGERS OF THE NEW JERSEY SANATORIUM FOR TUBERCULOUS DISEASES, 1902. Paper. Pp. 10. Camden, N. J.: Sinnickson Chew & Sons Co. 1902.

THERAPEUTICS OF INFANCY AND CHILDHOOD. By A. Jacobi, M.D., LL.D. Third Edition. Cloth. Pp. 559. Price, $3.50. Philadelphia and London: J. B. Lippincott Co. 1903.

ANNUAL REPORT OF THE NORTHEASTERN DISPENSARY, Baltimore, Md. Paper. Pp. 12.

The Public Service.

Navy Changes.

Changes in the Medical Corps of the Navy, for the week ending Feb. 21, 1903:

Medical Director J. A. Hawke, retired, detached from Naval Hospital, Mare Island, Cal., and ordered home.

Medical Inspector M. H. Simons, ordered to Washington, February 24, for examination for promotion, and thence to Naval Hospital, Mare Island, Cal.

Surgeon H. B. Fitts, detached from the Naval Hospital, Sitka, Alaska, and ordered to the *Pensacola*.

A. A. Surgeon H. T. Nelson, Jr., ordered to the Marine Barracks, Sitka, Alaska.

Medical Inspector D. N. Bertolette, detached from the *New York*, and from duty as fleet surgeon of the Pacific Station, and ordered home to wait orders.

Surgeon D. O. Lewis, detached from the *Pensacola* and ordered to the *New York* for duty as fleet surgeon of the Pacific Station.

A. A. Surgeon G. C. Grieve, ordered to the Navy Yard, Boston.

A. A. Surgeon J. R. Dykes, ordered to the *Franklin*.

A. A. Surgeon V. Dabney, ordered to the *Pensacola*.

A. A. Surgeon T. C. Blackburn, ordered to the *Culgoa*.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Feb. 19, 1903:

Surgeon P. C. Kalloch, to proceed to Augusta, Me., for special temporary duty.

Surgeon S. D. Brooks, to assume temporary command of the Portland, Me., quarantine station during the absence of Surgeon P. C. Kalloch.

Asst.-Surgeon Edward Francis, relieved from duty in the Hygienic Laboratory, and directed to proceed to Mexico and Durango, Mexico, for special temporary duty.

Asst.-Surgeon W. K. Ward, granted leave of absence for four days from Feb. 13, 1903, under Paragraph 191 of the regulations.

A. A. Surgeon J. T. Bullard, granted leave of absence for 30 days from February 13.

Pharmacist E. M. Holt, to proceed to Louisville, Ky., and report to P. A. Surgeon G. B. Young, chairman of board of examiners, to determine his fitness for promotion to the grade of pharmacist of the second class.

Pharmacist G. A. Morris, granted leave of absence for seven days from Feb. 11, 1903, under Paragraph 210 of the regulations.

PROMOTION.

P. A. Surgeon G. M. Guiteras, commissioned as surgeon to rank as such from Dec. 13, 1902.

BOARD CONVENED.

Board convened at the marine hospital, Louisville, Ky., for the purpose of examining Pharmacist E. M. Holt, to determine his fitness for promotion to the grade of pharmacist of the second class. Detail for the Board: P. A. Surgeon G. B. Young, chairman; Asst.-Surgeon T. D. Berry, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Feb. 20, 1903:

SMALLPOX—UNITED STATES.

California: Fresno, Jan. 1-31, 15 cases; Los Angeles, Jan. 31-Feb. 7, 2 cases; Sacramento, Jan. 31-Feb. 7, 1 case; San Francisco, Jan. 24-Feb. 8, 13 cases.

Colorado: Jan. 31-Feb. 7, Colorado Springs, 1 case; Denver, 8 cases.

Illinois: Belleville, Jan. 31-Feb. 7, 1 case; Galesburg, Jan. 31-Feb. 14, 7 cases.

Indiana: Elwood, Feb. 8-15, 3 cases; Evansville, Jan. 31-Feb. 14, 9 cases, 1 death; Indianapolis, Jan. 31-Feb. 14, 121 cases, 24 deaths; South Bend, Jan. 31-Feb. 7, 1 case.

Iowa: Davenport, Jan. 31-Feb. 14, 12 cases; Ottumwa, Jan. 8-10, 1 case.

Kentucky: Lexington, Jan. 31-Feb. 14, 4 cases; Newport, Jan. 31-Feb. 14, 2 cases.

Louisiana: New Orleans, Jan. 31-Feb. 12, 3 cases, 2 imported.

Maine: Biddeford, Feb. 7-14, 12 cases; Eastport, Feb. 7-10, 13 cases; Portland, Jan. 31-Feb. 7, 1 case.

Maryland: Baltimore, Feb. 7-14, 1 case.

Massachusetts: Boston, Feb. 7-14, 4 cases, 2 deaths; Haverhill, Feb. 7-14, 1 case; Lynn, Jan. 31-Feb. 7, 1 case.

Michigan: Detroit, Feb. 7-14, 38 cases, 1 death; Flint, Jan. 31-Feb. 14, 4 cases; Grand Rapids, Feb. 7-14, 10 cases; Port Huron, Feb. 7-14, 12 cases.

Nebraska: Omaha, Jan. 31-Feb. 7, 7 cases.

New Hampshire: Manchester, Jan. 31-Feb. 7, 10 cases.

New Jersey: Camden, Feb. 7-14, 1 case; Jersey City, Feb. 8-15, 3 cases, 1 death; Newark, Feb. 7-14, 1 case; Plainfield, Feb. 7-14, 1 case, imported.

New York: New York, Feb. 7-14, 3 cases.

Ohio: Chillicothe, Jan. 24-31, 8 cases; Feb. 7-14, 3 cases; Cincinnati, Feb. 6-13, 7 cases; Cleveland, Jan. 31-Feb. 14, 16 cases, 4 deaths; Dayton, Feb. 7-14, 1 death; Hamilton, Jan. 31-Feb. 14, 2 cases; Toledo, Jan. 31-Feb. 14, 15 cases, 1 death.

Pennsylvania: Butler, Jan. 17-Feb. 7, 2 cases; Erie, Jan. 31-Feb. 7, 4 cases; Johnstown, Jan. 31-Feb. 14, 5 cases, 3 cases imported; Philadelphia, Feb. 7-14, 30 cases, 2 deaths; Pittsburg, Jan. 31-Feb. 7, 18 cases, 3 deaths; York, Jan. 1-31, 1 case.

South Carolina: Charleston, Jan. 31-Feb. 7, 14 cases, 1 death.

Utah: Ogden, Jan. 1-31, 17 cases; Salt Lake City, Jan. 31-Feb. 7, 21 cases.

Wisconsin: Milwaukee, Jan. 31-Feb. 14, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, Jan. 17-24, 7 cases.

Barbados: Jan. 16-30, 8 cases.

Belgium: Jan. 17-24, Antwerp, 4 cases, 2 deaths; Brussels, 1 death.

Canada: Amherstburg, Jan. 24-31, 1 case; Winnipeg, Jan. 31-Feb. 7, 1 case.

Canary Islands: Las Palmas, Jan. 17-24, 33 cases, 2 deaths.

Colombia: Cartagena, Jan. 26-Feb. 1, 1 death.

Ecuador: Guayaquil, Jan. 24-31, 1 death.

France: Rheims, Jan. 18-24, 1 case.

Germany: Hamburg, Jan. 24-31, 1 case; Leipsic, Jan. 17-24, 1 death.

Great Britain: Dublin, Jan. 17-31, 1 case, 1 death; Leeds, Jan. 24-31, 4 cases; London, Jan. 24-31, 6 cases; Manchester, Jan. 17-31, 27 cases, 1 death; Nottingham, Jan. 17-31, 14 cases.

India: Bombay, Jan. 6-20, 61 cases; Calcutta, Dec. 13-Jan. 17, 2 cases; Madras, Dec. 20-26, 2 deaths.

Italy: Palermo, Jan. 10-31, 15 cases, 5 deaths.

Mexico: City of Mexico, Jan. 26-Feb. 1, 4 cases, 4 deaths.

Russia: Moscow, Jan. 10-24, 7 cases, 4 deaths; Odessa, Jan. 17-24, 2 cases; St. Petersburg, Jan. 10-24, 71 cases, 21 deaths.

Straits Settlements: Singapore, Dec. 27-Jan. 3, 3 deaths.

Turkey: Constantinople, Jan. 18-25, 1 death.

SMALLPOX—INSULAR.

Philippines: Manila, Dec. 13-27, 2 cases.

YELLOW FEVER.

Colombia: Panama, Jan. 26-Feb. 9, 5 cases, 2 deaths.

Ecuador: Guayaquil, Jan. 17-24, 20 deaths.

Mexico: Vera Cruz, Jan. 31-Feb. 7, 2 cases, 2 deaths.

CHOLERA—INSULAR.

Philippines: Manila, Dec. 13-27, 16 cases, 10 deaths; Provinces, Dec. 13-27, 1,130 cases, 813 deaths.

CHOLERA—FOREIGN.

India: Bombay, Jan. 9-20, 1 death; Calcutta, Dec. 13, 152 deaths.

PLAGUE—INSULAR.

Hawaii: Honolulu, Feb. 5, 1 death.

Philippines: Manila, Dec. 13-27, 1 death.

PLAGUE—FOREIGN.

India: Bombay, Jan. 6-20, 818 deaths; Calcutta, Dec. 13-Jan. 17, 85 deaths; Karachi, Dec. 28-Jan. 11, 53 cases, 52 deaths; Madras, Dec. 20-26, 1 death.

Mexico: Mazatlan, Feb. 4-12, 11 new cases, 23 deaths.